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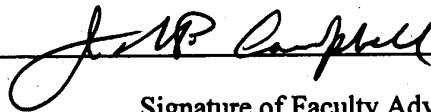
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New Explorations in the Field of Leadership Research:
A Walk on the Dark Side of Personality & Implications for Leadership (In)Effectiveness

A THESIS
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA
BY

MICHAEL JAMES BENSON

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

JOHN P. CAMPBELL, ADVISER

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Dedicated in loving memory of
Andrea Elizabeth Benson
June 11, 1975 – August 9, 2005

To my wonderful parents

And, to all leaders ... past, present, and future

Abstract

If asked to generate a list of leaders, most people could quickly provide the names of several very popular, successful, and great leaders. It seems that when we think about leadership, we are conditioned to think about only the positives—only the popular and prominent leaders. The increasing number of corporate scandals, ethical breaches, and failed organizations suggests that we have neglected a very important and fruitful side of leadership research—the dark side of personality and its effects on leadership and organizational performance with an emphasis on ineffective leadership or “leadership gone wrong.” The central objective of this thesis was to develop a more robust understanding of the predictor-criterion linkage in the leadership domain, with a particular emphasis on the derailing/dark side personality traits; and to test the assertion that using what we know about the personality-based, interpersonal flaws that lead to derailment and failure does, indeed, enhance our ability to predict leadership performance. The study employed available measures of FFM traits and derailing/dark side traits to test the hypotheses that: 1) derailing/dark side traits would be distinct from FFM personality traits, 2) including derailing/dark side traits in the prediction of leadership performance would account for additional, incremental variance beyond the FFM traits, 3) emotional stability/adjustment would moderate the relationship between leadership performance and derailing/dark side traits, and 4) the relationship between derailing/dark side traits and leadership performance would be curvilinear and follow an inverted U function. The results provided robust support for the validity and utility of using derailing/dark side traits in the selection of leaders and the assessment of leadership performance across a wide range of samples including a multi-organization sample as well as single organization samples (sample 1 $N = 1306$; sample 2 $N = 290$; sample 3 $N = 220$). Incremental variance accounted for by the derailing/dark side measures ranged from 2% - 5% beyond the FFM traits and partial support was found for the moderation and curvilinear hypotheses. Implications for theory, future leadership research, management/leadership practitioners are also discussed.

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New Explorations in the Field of Leadership Research:
A Walk on the Dark Side of Personality & Implications for Leadership
(In)Effectiveness¹

It's instructive that an individual as ideally suited to a job as Pitt (former SEC chairman) could ultimately fail. Too often, we assume that someone whose professional background is a perfect fit for a job—who has the ideal combination of intellectual acumen, experience, and expertise—cannot fail. The lesson: Never underestimate the power of personality in undermining the success of even the most brilliant and well-suited leader. (Dotlich & Cairo, 2003, p. 62)

“Who we are determines how we lead.” (Hogan & Kaiser, 2005, p. 170)

Despite the long history of leadership research and all that we, as a collective group, know about the topic, the first quote at the beginning of this thesis highlights an area that has not been extensively studied by leadership researchers to date—the role and importance of dysfunctional personality traits to managerial derailment and failure. Unfortunately, the recent occurrences of corporate scandals, ethical breaches, and corporate malfeasance have spurred researchers to begin investigations in this area. The mere mention of Enron, Tyco, WorldCom, General Magic, Samsung Motors or individuals like Kenneth Lay, Bernie Ebbers, Dennis Kozlowski, or Martha Stewart bring to mind thousands of lost jobs, billions of dollars squandered, careers ruined, and public trust eroded or destroyed (Curphy, Hogan, & Hogan, 2004a; Dotlich & Cairo, 2003; Finkelstein, 2003). Some may try to dismiss these instances as merely exceptions to the rule, but the numbers and magnitude of these incidents continue to increase and expand. In fact, Hogan and Curphy (2004) assert that managerial incompetence base rates are as

¹ Author Note: The views expressed in this thesis are those of the author and do not reflect the official policy of the United States Air Force, Department of Defense, or the U.S. Government.

high as 50% of all managers (see also Curphy, Hogan, & Hogan, 2004a; Curphy, Hogan, & Hogan, 2004b; Hogan, Curphy, & Hogan, 1994) which is a slight decrease from the earlier assertion of Hogan, Raskin, & Fazzini (1990) that the base rate of flawed leadership was fully 60-75%; however, the reality stands that this level of incompetence is staggeringly high. Given the overwhelming evidence of failed leadership, as well as the magnitude of the associated consequences, leadership researchers have an obligation to research, understand, and act on what is going on in the world of work. The number of workers exposed to incompetent managers and leaders is substantial and, according to Hogan and Hogan (2001), there ought to be some social obligation to try to improve these peoples' everyday work lives.

What accounts for so many of these recent scandals? Simply put, it is failed leadership! The real questions, at the crux of this issue, are what cause failed leadership and the significant financial, social, and emotional fallout that accompanies these events—and is there anything that can be done to prevent this problem from becoming more rampant than it has? Developing an understanding of what leads to failed leadership is far more involved than simply looking at the “flip side” of what leads to successful leadership emergence or effectiveness. In fact, this paper posits that leadership failure (and managerial incompetence) is most often associated with some personality or character flaw in the individual who is otherwise fully capable and qualified to perform and excel (Lombardo, Ruderman, & McCauley, 1988; McCall & Lombardo, 1983). These personological flaws have been termed “dark side” personality traits (Hogan et al., 1994; Hogan & Hogan, 1997, 2001) or “derailing” traits (ePredix, 2001; Schmit, Kihm, & Robie, 2000) and can be measured with inventories like the

Hogan Development Survey (HDS; Hogan & Hogan, 1997) or the Global Personality Inventory (GPI; ePredix, 2001).

This thesis has three primary aims. First, I provide a broad review of the relevant literature. This review includes the focal areas of managerial derailment, personality, leadership, and taxonomies of managerial/leader performance with a particular emphasis on the conceptual development, validation, and explication of the derailing/dark side personality traits. Chapter 1 concludes by offering a broad set of research areas/questions that are noteworthy and in need of research attention as one avenue to advance the collective knowledge in the leadership research domain. Second, in Chapter 2, I narrow the focus of the thesis by specifying that the explicit, overarching objective of this study is to develop a more robust understanding of the possible predictors in the leadership domain, with a specific emphasis on derailing/dark side traits, and how these predictors can be included to better understand the predictor criterion linkage. Specifically, this study looks at the relationships between the FFM traits and the derailing/dark side traits with respect to leadership performance. Chapter 2 concludes with by presenting the four testable hypotheses for the current study as well as a review of the analytic methods to be employed. Finally, Chapters 3-5 outline the methods employed, the results of the data analysis, and a detailed discussion of these results that includes the key contributions made by this research, limitations to the current study, and implications for future research as well as for theory and practitioners.

*The Study of Leadership: An Abbreviated History*²

The importance of leadership historically, as well as future looking, has been well documented and studied. In fact, some authors (Hogan & Kaiser, 2005) argue that leadership is one of the most important topics in the human sciences and potentially responsible for the very survival of humanity. Bass (1990), in the most thorough and complete volume of leadership available, writes:

The study of leadership rivals in age the emergence of civilization, which shaped its leaders as much as it was shaped by them. From its infancy, the study of history has been the study of leaders—what they did and why they did it. Over the centuries, the effort to formulate principles of leadership spread from the study of history and the philosophy associated with it to all the developing social sciences. In modern psychohistory, there is still a search for generalizations about leadership, built on the in-depth analysis of the development, motivation, and competencies of world leaders, living and dead. (p. 3)

Indeed, we, as a society, are enamored not only with the leaders themselves, but also with trying to understand how we can improve our own “leader like” behaviors based on what others have done. Given this penchant, it is not surprising that the shelves of bookstores are jam-packed with personal recollections of why great leaders were, in fact, great and how the average individual can leverage those “traits” to improve their leadership skills. Interestingly, writings in this tradition return to the very beginnings of the leadership research and an initial focus on “Great Man” theories of leadership. This brief historical

² This historical review is necessarily brief; interested readers should consult: Bass (1990), Chemers, 2000; Den Hartog & Koopman, 2002, House & Aditya (1997), or Yukl & Van Fleet (1992).

review traces the path of leadership research and also addresses some of the key issues and concerns as the field moves forward (see Table 1 for a summary of the leadership research paradigms).

The Trait Approach. The common belief dating back to the early 1900's that leaders and followers were fundamentally (and dispositionally) different gave rise to the "Great Man" theories of leadership and served as the precursors to the trait approach to leadership (Stogdill, 1948, 1974, 1975). The focus of these early research efforts was to determine across what personality traits, physical attributes, intelligence, or personal values leaders and non-leaders differed. The implicit notion was that discovering this set of stable traits, abilities, and other characteristics would lead to a certain identification of the perfect or ideal leader and such a prototype could be used to identify and select people into leadership positions. Unfortunately, even though several of the early studies found significant correlations (at times as high as 0.50) between specific traits and leadership, many studies failed to replicate findings across studies and the search for universal leadership traits stalled. Important early reviews by Mann (1959) and Stogdill (1948) reached the conclusion that the search for an exact set of "true" leadership traits was not likely to advance the field of leadership research. It should be noted that much of this initial reaction to the search for leadership traits can be linked to a lack of a coherent theory and associated limitations in the field of personality psychology (Hogan, 2005; McAdams, 1997; Winter & Barenbaum, 1999).

The Behavioral/Leadership Styles Approach. With the general consensus in research circles to move away from the trait paradigm, the field turned to a leadership behavior paradigm, which is also referred to as a leadership styles approach (Den Hartog

& Koopman, 2002; House & Aditya, 1997; Yukl & Van Fleet, 1992). The shift in thinking and theorizing was from “who” leaders are to “what” leaders do. The two most significant streams of research in this domain were developed at the Ohio State University and the University of Michigan. The Ohio State studies collected information from leaders and subordinates regarding actual leadership behaviors. The subsequent analysis yielded a 2-factor solution: Consideration and Initiating Structure. Consideration refers to a leader’s behavior toward subordinates (i.e., friendly, supportive, etc.) while Initiating Structure refers to the emphasis a leader places on task accomplishment. Similarly, the University of Michigan researchers, through the use of questionnaires, attempted to determine the leader behaviors that were at the root of effective group performance. From this research, job-centered and employee-centered dimensions emerged that are closely akin to the consideration and initiating structure of the Ohio State Studies. The most significant difference between the two models was that the consideration and initiating structure were argued to be two separate continuums, while the job-centered and employee-centered dimensions were thought to be opposite ends of the same continuum. Clearly, this difference had profound implications for trying to determine a universal set of behaviors that would translate to leadership effectiveness (Hughes, Ginnett, & Curphy, 2005). Much like the criticisms of the trait approach, the behavior/styles approach suffered from inconsistent findings, an emphasis on laboratory studies, and a general disregard for situational characteristics that might operate as moderators (Den Hartog & Koopman, 2002; House & Aditya, 1997). However, a recent meta-analysis by Judge, Piccolo, and Ilies (2004) cumulated more than 150 independent correlations for consideration and initiating structure and found

moderately strong, non-zero correlations with various leadership outcomes including follower job satisfaction and motivation, leader performance, group performance, and leader effectiveness (across all outcomes, correlations of 0.48 and 0.29 for consideration and initiating structure, respectively were reported). Furthermore, consideration was more strongly related to follower satisfaction, motivation, and leader effectiveness, while initiating structure was more strongly related to leader performance and group/organization performance. These results suggest that both Consideration and Initiating Structure might still have important, meaningful places in the continued study of leadership. It is also interesting to note that this time period roughly parallels the shift in the study of personality from the internal structures of people (i.e., traits) to a behavioristic model based on what they actually do, the situations they find themselves in, and how they are reinforced and punished (Hogan, 2005; McAdams, 1997; Winter & Barenbaum, 1999). Concomitantly, the Mischel (1968) critique arguing that there was no such thing as personality or stability across situations, served to fuel the move toward studying personality theory based on theories of behaviorism. This set the stage for the person-situation debate, as well as the move in the leadership literature to a contingency approach as a way to address the limitations of the previous paradigms in leadership research.

The Contingency Approach. Den Hartog and Koopman (2002) succinctly state, “The main proposition in contingency approaches is that the effectiveness of the given leadership style is contingent on the situation, implying that certain leader behaviors will be effective in some situations, but not others” (p. 169). The range of theories offered during this time was wide and varied and included Fiedler’s Contingency Model, based

on the “least preferred coworker scale”; Hersey and Blanchard’s Situational Leadership Model; Vroom and colleagues Normative Decision Model; House and colleagues Path-Goal Theory; Fiedler’s Cognitive Resources Theory; Leadership Substitutes (Den Hartog & Koopman, 2002; Fiedler, 1971; House & Aditya, 1997; Hughes et al., 2005; Yukl, 2002; Yukl & Van Fleet, 1992). Although the shift to this new contingency paradigm generated a lot of theorizing, model building, and research, the outcomes were generally disappointing and similar to other leadership research paradigms. In particular, the research support and evidence was mixed and inconsistent (House & Aditya, 1997), many of the components of the various theories were hard to operationalize, measure and test, and perhaps most damaging was that all of these theories contained an under-specification of the intervening processes included in the models (Yukl & Van Fleet, 1992). However, it is important to note that this stream of research did move the field forward and showed its commitment to the scientific process—many of the initial theories were revised and improved and in some cases, completely new theories aimed at improving our understanding of leadership were created. For instance Fielder’s initial Contingency Model gave way to the Cognitive Resources Theory and House’s initial Path-Goal Theory led to the development of the Theory of Charismatic Leadership (House & Aditya, 1997). The waning interest in the late 1970’s for contingency approaches gave way to the final major paradigmatic transition in the leadership research—neocharismatic (i.e., transformational) approaches.

The Neocharismatic Approach. The genesis of charismatic leadership is generally traced back to Max Weber’s writings in the early 1920’s. Once his work was translated into English, both political scientists and sociologists took a significant interest, but it

was not until the 1980's the psychology and management researchers showed much interest (Hughes et al., 2005; Yukl, 2002; Yukl & Van Fleet, 1992). Burns' (1978) treatise on leadership generally marks the beginning of Bass' (1985) theory of transformational leadership, as it was the initial distinction between the concepts of transactional and transformational leadership. It is generally accepted that transformational leadership focuses on trying to change organizations by appealing to followers' values or their sense of a higher purpose. On the other hand, transactional leadership focus on an exchange relationship between leaders and followers; the associated behaviors focus on monitoring and controlling employees through the exchange relationships oftentimes using economic means (Avolio & Bass, 1991; Bass, 1985, 1997, 1998; Bono & Judge, 2004). The majority of theories in this neocharismatic paradigm tend to take a much broader view of leadership and include aspects of all of the previous leadership research paradigms, which explains why it has become so popular with researchers over the last two decades. Additionally, the fact that research has shown positive outcomes and relationships with significant effectiveness measures continue to fuel the progress of research in this specific leadership domain.

Specifically, the accumulation of evidence supporting the link between transformational leadership and important outcomes (i.e., satisfaction and performance) is impressive and it continues to accumulate with respect to both primary studies (Bass, Avolio, Yung, Berson, 2003; Barling, Weber, & Kelloway, 1996; Bono & Judge, 2003; Careless, 1998; Dvir, Eden, Avolio, Shamir, 2002; Dvir & Shamir, 2003; Kark, Shamir, & Chen, 2003; Hater & Bass, 1988) and meta-analytic studies (Antonakis, Avolio, & Sivasubramaniam, 2003; DeGroot, Kiker, & Cross, 2000; Fuller, Patterson, Kester, &

Stringer, 1996; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996). For example, transformational leadership ratings have been found to be positively correlated with supervisory performance evaluations (Hater & Bass, 1988), financial performance and overall performance (Barling et al., 1996) as well as goals and objectives achieved (Howell & Avolio, 1993). Additionally, transformational leadership is positively related to job satisfaction and organizational commitment (Bono & Judge, 2003) and follower dependence and empowerment (Kark et al., 2003). To summarize and cumulate these results, Judge and Piccolo (2004) conducted a meta-analytic study and reported generally strong support for the validity of transformational ($\rho = 0.44$) and transactional ($\rho = 0.39$) leadership across a wide variety of outcomes measures and settings. A more global and comprehensive review of the linkages between transactional-transformational leadership and performance can be found in Bass (1998) and Avolio (1999), as well as in the meta-analytic reviews mentioned above. In addition to research focusing on links with organizational outcome variables, a search for the antecedents of these important leadership behaviors is being pursued. For example, Bono and Judge (2004) suggest the evidence for personality traits as antecedents to transformational leadership behaviors is generally weak. One recommendation from these researchers suggests that focusing on narrower and more fine-grained personality traits might provide one avenue for further research. More specifically, and in line with the notion of the bandwidth-fidelity issues often cited in the personality job performance literature (Ones & Visweswaran, 1996; Schneider, Hough, & Dunnette, 1996), it is possible to investigate the relationships between more refined, narrow personality traits and leadership styles or effectiveness. A more precise understanding of these potential relationships has significant implications

for both selection and training applications in organizations. Moreover, a comprehensive research paradigm that either links these streams of research together (i.e., from antecedents to behavior to outcomes) or one that pursues long-term, longitudinal or linkage studies would go a long way to advancing the study of leadership.

A Resurgence of the Trait Approach. As outlined above, the shift to a broader, more encompassing neocharismatic approaches as well as an early meta-analytic study by Lord, DeVader, and Alliger (1986) has also propelled a resurgence of the trait-based approaches to leadership. However, this shift in leadership research paradigms is not the sole cause of the trait approach reemergence. It is true that substantial amounts of recent research support the dispositional basis for many meaningful outcomes like performance, satisfaction, and other key organizationally relevant criteria (Barrick, Mount, & Judge, 2001; Hogan, Hogan, & Roberts, 1996; Hough & Ones, 2001; Judge, Bono, Ilies, & Gerhardt, 2002; Judge, Heller, & Mount, 2002; Barrick & Mount, 1991). These generally strong, consistent results emerged only more recently with the general acceptance of a broad taxonomy of personality structure known as the five-factor model (FFM) of personality (Digman, 1990; Costa & McCrae, 1992). The introduction of this organizing taxonomy allowed researchers to deal with the problem of different researchers using different labels when, in fact, they were assessing the same (or similar) constructs (House & Aditya, 1997). Using the FFM as a starting point, Judge and colleagues meta-analyzed 222 correlations from 73 samples and found significant overlap between personality traits and leadership outcomes. Specifically, the Multiple Rs, using the traits of the FFM to predict leadership emergence (i.e., being perceived as “leader-like”) and effectiveness (i.e., subordinate or supervisor ratings of effectiveness), were

0.53 and 0.39, respectively, and 0.48 across both leadership criterion measures (Judge et al., 2002). The combination of a paradigm that uses a broader approach to leadership research and the emergence of an organizing taxonomy of personality has optimistically renewed interest in the trait approach to leadership research.

Important Issues in Leadership Research. Although a complete review of the current issues and concerns in the field of leadership research is beyond the scope of this paper, two specific issues must be addressed. First, and foremost, what is the definition of leadership? Second, what do we mean by leadership outcomes? I have intentionally selected the term “outcomes” to suggest a very broad interpretation that allows one to capture the notions of emergence, effectiveness, and performance, as well as the determination of the specific level of the outcome (individual, dyad, group, or organization). These two issues, and a precise specification of what a researcher means when they use these terms, is absolutely critical in order to continue to advance the field. The notion here is not that there is one absolutely correct answer for either case, but that researchers must clearly specify and elucidate their particular definitions and measures.

With respect to the definition of leadership, it is not uncommon to hear people lament that there are as many definitions of leadership as there are people doing leadership research. Any introductory text (Hughes et al., 2005; Yukl, 2002) or review article (Chemers, 2000; Den Hartog & Koopman, 2002; Yukl & Van Fleet, 1992) will demonstrate this point by listing copious different definitions—some that are quite similar and others that are not—and then offer some hybrid of the best alternatives. I am in agreement with Bryman (1992) that three distinct elements must emerge: group, influence, and goal; it would be best if these elements were explicitly accounted for in the

working definition. Again, the notion here is not that one specific, correct definition of leadership exists, but that researchers must be precise with the operationalization of the construct.

Next, and nearly as important, researchers must establish the leadership outcome of interest. Again, this is not necessarily a question of there being one correct specification of what effective leadership is (i.e., a behavioral taxonomy or domain/competency model), but it is a minimum requirement. As Hogan et al. (1994) astutely argue, the source of the data (in the case of leadership ratings) most certainly impacts the quality and type of information provided. It should not be surprising that supervisor ratings compared to subordinate ratings compared to objective measures of performance (at the group or organizational level) might lead to drastically different conclusions and findings. Furthermore, inherent in this decision of what leadership outcome should be employed is the distinction of what level. By level, I am referring to the unit of analysis. For the purposes of this discussion, I endorse the distinction made by Kaiser (2005) and Kaiser and Hogan (2006) who argue that there are two distinct levels at the individual unit of analysis and group unit of analysis, respectively. At the individual unit of analysis, there are measures of emergence (“standing out”) and performance ratings (“approval”). Similarly, at the group unit of analysis there are “process” measures and “outcome” measures. The conclusions from their content analysis of what leadership researchers are measuring (and calling effectiveness) are quite informative. In fact, 57% of studies included focus on the individual unit of analysis (fully 38% of the total are “ratings” of effectiveness or approval) and only 13% of all studies focused on group level outcomes. The point here is not that there is

something inherently wrong with this distribution of studies, but that there seems to be a disconnect between the definition of leadership endorsed (see above) and the measures selected to capture effectiveness. The cumulative knowledge base of leadership research will be well served if researchers pay careful attention to matching the definition of leadership with correct category of leadership outcome measures.

In conclusion, this author agrees with House and Aditya (1997), "...the resulting contributions have been cumulative, and a great deal is known about leadership phenomena. However, there remain many unanswered questions" (p. 409). It is my hope that the proposed research will contribute meaningfully to the growing body of leadership research and be useful to both academics and practitioners.

Literature Review

*The Nature of Leadership and Failed Leadership*³

The exact nature and specification of both leadership and leadership failure is a topic that has been widely debated over the years. An in-depth discussion and analysis of these issues is beyond the scope of the current paper; however, it is important to be clear about the definitions (i.e., operationalization) for this study. With respect to leadership, Roach and Behling's (1984) notion that the concept focuses on the process of influencing an organized group toward accomplishing its goals (cited in Den Hartog & Koopman, 2002 & Hughes et al., 2005) is a good starting point. Additionally, Curphy et al. (2004a) extend this definition by suggesting that the aforementioned definition is the "ends" of leadership, while the "means" of leadership is through *building* and *maintaining* high

³ This section outlines in some detail how leadership (or managerial) failure, derailment, ineffectiveness, and incompetence occur along a continuum; however, for the purposes of this paper/proposal, the terms will be used interchangeably (with a general reliance on derailment or incompetence). Additionally, it is important to note that this work is more focused on assessing these issues in everyday work and leadership, not at the highest levels of organizations (CEOs) and not solely focused on illegal behaviors.

performing teams (Hogan & Kaiser, 2005; Kaiser & Hogan, 2006). More specifically, the “means” of leadership focuses on the Bryman (1992) elements of group and influence where as the “end” of leadership focuses on final element, goal achievement. As will become more evident later in this paper, both bright (i.e., FFM traits) and dark side traits that leaders possess often interact or interfere with the leader’s ability to achieve both the “means” and the “ends” of leadership.

The notion of “failed leadership” is one that conjures up images of executives and leaders being led out of elaborate corporate offices in hand-cuffs and being taken to jail. Although this has been the case in a small percentage of situations, this paper will draw a more nuanced notion of what leadership failure actually is. Van Velsor and Leslie (1995) suggest:

A derailed executive is one who, having reached the general manager level, finds that there is little chance of future advancement due to a misfit between job requirements and personal skills. The executive is either plateaued or leaves the organization altogether. Derailment in one company, however, does not permanently end a manager’s career. Those who leave their organizations because they resign, are fired, or take early retirement often go on to either start their own companies or join other firms where they are successful. (p. 62)

In line with the definition above, I posit overall leadership incompetence/ineffectiveness as a continuum with leadership failure as an extreme value on one end (e.g., Kenneth Lay and Enron) and more mild levels of incompetence/ineffectiveness on the other end (e.g., the examples most of us possess from our day-to-day work lives like a boss who exhibits

a lack of emotional control through routinely displaying emotional outbursts or who is so afraid to make a mistake that no decisions are ever made). Furthermore, the distinction here is that those competencies that lead to derailment or ineffectiveness are not simply the flipside of those that lead to promotion and success; rather they are a completely separate entity (Lombardo & Eichinger, 2004). In fact, it would be far more useful for organizations to predict the more mild cases of ineffectiveness early on in the leadership development process (or in a selection and promotion setting) and avoid the unnecessary and expensive pitfalls of the truly failed leadership that we read about in the media (see Lombardo et al., 1988; McCall & Lombardo, 1983). Furthermore, the ability to predict a wide-range of leadership ineffectiveness from dispositional traits and abilities has significant ramifications for organizational selection, promotion, and training and development.

Managerial Derailment

Although recent occurrences of corporate scandals and leadership failures (see introduction to this paper) might indicate that there is a long rich history of studying managerial/leadership derailment, this is not the case. In fact, there are two common themes that outline the majority of the research completed on this topic. First, the vast majority of this research has been produced and compiled by the Center for Creative Leadership (CCL) at the request of their clients. According to Lombardo et al. (1988), the clients who approached them to help find better ways to predict derailment estimated that each derailed executive cost the firm in excess of \$500,000 (see also McCall & Lombardo, 1983; Van Velsor & Leslie, 1995). Second, it is almost exclusively built on qualitative and retrospective research. Neither one of these points is meant to be a

criticism of the research, merely a statement regarding the evolution of the research and an indication of the scope of this relatively unexplored area. In fact, Conger (1998) forwards several strong arguments for a need to continue pursuing qualitative research—especially in the leadership arena. In his view, research that includes observational studies, ethnographic studies, and interviewing protocols is particularly well-suited, and perhaps even better-suited than most quantitative methods, to address the following issues: dealing with multiple levels of analysis and how they interact with one another, accurately measuring the dynamic nature of leadership (i.e., moving beyond static measures), and capturing the symbolic and subjective components of leadership in action. It is also important to note that qualitative in no way imply less rigor compared to what a researcher can leverage doing quantitative research—it is simply a different approach that offers an alternative mechanism to study similar questions (Conger, 1998).

McCall and Lombardo (1983) studied a group of derailed executives and contrasted that group to a group of executives that had remained successful—their conclusions: it was a combination of managerial inadequacies and personal flaws that led to the ultimate derailment. Some of the specific behaviors related to this conclusion included: insensitive to others; aloof, cold, and arrogant; betrayal of trust; overly ambitious; miscellaneous skill deficiencies; burned out. The three overarching categories identified by these researchers were 1) managerial skills, 2) personal qualities, and 3) ability to lead others. Lombardo et al. (1988) attempted to build on these findings by shifting to a more quantitative approach. Based on the qualitative factors identified in previous research, these researchers built and validated rating scales (via factor analytic methods) and were able to compare derailed and successful managers. The data clearly

supported the fact that derailed executives were rated significantly lower across all scales; the scales consisted of items linked to both personal flaws (honor, sensitivity, composure) and managerial flaws (handling business complexity and staffing). More recent evidence from Van Velsor and Leslie (1995) reevaluated these “causes” of derailment both across time and culture and reached very similar conclusions. Although there was a high degree of consistency between European and American derailment factors, the major shift reported was in the changing dynamics of derailment over time. It is even more clear during times of higher levels of organizational complexity, globalization, and downsizing that the emphasis is less on managerial skills (or lack thereof) and much more on personal skills (in particular, building and maintaining high performing teams) leading to derailment.

In a separate effort, Finkelstein (2003) and colleagues provided insights based on the culmination of information from their qualitative research effort spanning 6 years and focused on studying a wide variety of executives and corporations across a wide variety of industries and countries. Similar to the work accomplished by CCL (in particular, Van Velsor and Leslie (1995)), this research focused on both managerial/business skills and personal attributes of the leaders that might explain the occurrence of business failures on a very large level (in some cases, total product failure or organizational collapse). The authors indicate it would be easy to simply try to attribute these failures to lack of execution, unintelligent leaders, or some environmental cause; however, the failed executives studied were all quite similar to their successful contemporaries across all of these “success” factors. To the contrary, they identified 7 habits of “spectacularly unsuccessful people” (Finkelstein, 2003 p. 238). A complete list of these habits is

located in Table 2a; however, several key issues are worth noting here. First, they act as if they have all of the answers, dazzling people with the speed and quickness they can provide solutions to tough questions and situations. Next, they ensure people are 100 percent behind them—if they are not, these people are quickly removed or shuffled out of the way. Finally, they never hesitate to return to strategies that were successful in the past, regardless of how different the current situation might be. As a whole, these are all behaviors that are far from behavior that will likely engender follower trust, motivation, and commitment to the organization (and consequently performance). Furthermore, they are very much in line with the results from CCL’s work on derailed managers.

Another research stream relevant to the current discussion is one based on a recent move to integrate the tenets of positive psychology (Rath & Clifton, 2004; Seligman & Csikszentmihalyi, 2000; Seligman, Steen, Park, & Peterson, 2005; Simonton & Baumeister, 2005) into the fields of leadership and management development with a particular emphasis on identifying and leveraging a person’s strengths to increased capability and performance (Buckingham & Clifton, 2001). Furthermore, this move has fueled an interest in integrating the concepts of authenticity to the study of both leader and follower development (Avolio & Gardner, 2005; Avolio, Gardner, Walumbwa, Luthans, & May, 2004; George, 2003; Gardner, Avolio, Luthans, May, & Walumbwa, 2005; May, Chan, Hodges, & Avolio, 2003). In line with these ideas, Zenger and Folkman (2002) provide empirical results cumulated over several years and across numerous businesses and industries that argues the path from good managers to great leaders can be found in leveraging a person’s strength and assets instead of trying to improve weaknesses. However, these authors note that there are a set of “fatal flaws”

that will stop progress in its tracks. These fatal flaws include: 1) inability to learn from mistakes, 2) lack of core interpersonal skills and competencies, 3) lack of openness to new and different ideas, 4) lack of accountability, and 5) lack of initiative (see Table 2b). Any one of these issues can be enough to render the leader ineffective in their current position and obviously more than one increases the probability of derailment exponentially.

One final research stream that directly addresses the issue of failure and derailment is presented by Lombardo and Eichinger (2004) and is based on a longitudinal database of more than 1,000 managers and leaders over a 2-year period. As noted above, and similar to Zenger and Folkman (2002), these authors argue that derailing or being fired is not simply the flip side of being promoted or being successful, it is a different set of competencies that predict each outcome. In answer to the question what gets managers fired, Lombardo and Eichinger argue that lower scores on approachability, managing diversity, patience, political savvy, integrity and trust, managing and measuring work, and organizing or higher scores on insensitive to others, lack of ethics and values, and poor administrator lead to a higher probability of termination. The argument here is not that everyone of these potential derailers or “fatal flaws” is completely dispositional or trait-based, but rather a significant number of them are, and many of them are the very things that almost ensure problems in the areas of trust, interpersonal relationships, and accomplishing goals. Merging the results of these independent research streams (i.e., isolating the derailment factors and flaws identified) suggests that in all likelihood, internal character or personal flaws increase the chances

for derailment. In essence, both the “means” and “ends” of leadership are directly affected and this highlights three very important issues.

First, a deeper understanding of how various personality (and other traits) interact to affect leadership effectiveness might be a key element to predicting and avoiding leadership failures in organizations (this necessarily includes a move to something beyond the current five-factor models of personality—see below). Next, leadership derailment is far more than simply lacking the skills or abilities of your successful counterparts (success and derailment are not opposite poles of the same continuum). Finally, and perhaps more importantly, the increased emphasis on personal or internal character flaws suggests that the behaviors these leaders display might simply be a manifestation of some underlying, stable trait. In fact, the early work by CCL, complemented by the recent work of Finkelstein (2003), Lombardo and Eichinger (2004), and Zenger and Folkman (2002) provided a sufficient foundation for Hogan and his associates to pursue an investigation focusing on identifying these underlying traits. Prior to reviewing the development and validation of the HDS survey, a review of what we know about personality and leadership, in general, is the focus of the next section.

Bright Side versus Dark Side

The conceptual distinction between bright and dark side personality originated with Hogan and his colleagues. Hogan et al. (1994) refer to the traditional FFM traits as “bright side” traits. Although there is not complete agreement about whether the FFM model is the best representation of personality (Block, 1995; Eysenck, 1992; Hough, 1992) in practice it is the model of choice for the majority of personality related research (Judge & Bono, 2000; Judge et al., 2002; Bono & Judge, 2004). The traits typically

included in these models are: Extraversion, Neuroticism (Emotional Stability), Openness to Experience (Intellectance), Agreeableness, and Conscientiousness (see Digman, 1990; Goldberg, 1999; Costa & McCrae, 1992 for more explicit definitions). These are the traits leaders possess in everyday life and are exhibited when they are performing at their best—achieving the means and ends of leadership (Hogan & Curphy, 2004). On the other hand, “dark side” traits can be thought about as those irritating tendencies that tend to show themselves in times of increased stress or crises. For instance, these traits describe people who are prone to emotional outbursts, yelling, and losing control (HDS dimension, excitable) or those who become so overly careful and focused on the details that they are unwilling to make a decision (HDS dimension, cautious). They are particularly problematic because they damage a leader’s ability to build and maintain high performing teams. More specifically, they undermine trust, interpersonal relationships, follower commitment, and are common causes of ultimate failure, derailment, or general ineffectiveness. Using the bright side and dark side distinction as an organizing taxonomy, the following sections of this paper will briefly review what we know about each area with respect to leadership.

The Trait Perspective and Leadership Research. As outlined above, the trait paradigm in leadership research has enjoyed a storied and complicated past. Much of the early trait research was hampered by the lack of a coherent organizing taxonomy and led to the abandonment of trait research in the late 1940s/early 1950s (see Chemers, 2000; Den Hartog & Koopman, 2002; House & Aditya, 1997; Hughes et al., 2005; Yukl, 2002; Yukl & Van Fleet, 1992 for a thorough review of this area). However, trait research has seen a resurgence with the advent of statistical procedures (meta-analysis; Lord et al.,

1986) to combine findings across studies as well as the development of a robust taxonomy of personality—the FFM. Judge et al., (2002) provide an extensive qualitative and quantitative review of the literature on leadership as it relates to leadership emergence and effectiveness. In general, the findings support using the FFM as a basis for evaluating the dispositional basis of leadership. In particular, Extraversion was the strongest and most consistent correlate and predictor of leadership ($\rho = 0.31$), followed by Conscientiousness ($\rho = 0.28$) and Openness to Experience and Neuroticism ($\rho = 0.24$ and -0.24 , respectively). However, Judge & Bono (2000) used 14 samples from over 200 organizations to analyze the relationships between FFM traits and transformational leadership ratings and reached different conclusions than the more general leadership meta-analysis cited above. Their results revealed that both Extraversion and Agreeableness positively predicted transformational leadership (Openness to Experience positively correlated with transformational leadership, but was non-significant when the effects of the other traits were controlled) and Neuroticism and Conscientiousness were unrelated to transformational leadership across their samples. Finally, Bono & Judge (2004) provided meta-analytic evidence (using 324 correlations and 26 independent samples) showing support for Extraversion as the strongest correlate of transformational leadership (as a composite and its individual component scales), but the correlations with the other four traits were more modest and less consistent across studies. The generally weak associations reported by Bono & Judge, suggest that a more focused approach on narrower personality traits (i.e., the narrowly focused dark side traits might provide one avenue worth investigating) as well as non-dispositional traits would

be useful in gaining a better understanding of both transformational and transactional leadership.

Additionally, as the cross-cultural nature of leadership research continues to emerge as an important area of enquiry (with respect to both success and failure/derailment) it is important to consider this evidence as well (cf. Brodbeck et al., 2000). Two recent military studies (Australian and Canadian) provided additional support for the utility of the FFM in assessing leadership emergence and success. In particular, Bradley, Nicol, Charbonneau, and Meyer (2002) provided support for Surgency (Extraversion) and one of its facets (Dominance) as well as facet measures of Conscientiousness to be valid predictors of effectiveness and peer ratings of leadership. McCormack and Mellor (2002) using a sample of Australian army officers, in line with Judge et al. (2002) found both Conscientiousness and Openness to Experience to be positively correlated and predictive of promotion course attendance (i.e., leadership effectiveness measure). These results demonstrate the utility of FFM in both military and more culturally diverse settings.

Four other recent trends and methodologies with respect to dispositional research are worth note and consideration as researchers begin to expand the study of relevant traits to include dark side traits. First, Ilies, Gerhardt, and Le (2004) combined behavioral genetics heritability estimates for personality and cognitive ability with meta-analytically derived estimates of the relationships between these same variables and leadership emergence. They found that just over 17% of leadership emergence is genetically determined. Since these researchers only included personality and mental ability, this estimate can be seen as a lower bound estimate for the heritability of

leadership emergence. More recently, Arvey, Rotundo, Johnson, Zhang, and McGue (2006) using a sample of identical and fraternal twins estimated genetics (h^2 , heritability estimate) accounted for fully 30% of the variance in leader role occupancy. Of course, this leaves 70% of the variance to environmental factors, but these results coupled with other lines of trait research continue to support the notion of a dispositional basis to leadership. Additionally, Judge, Colbert, and Ilies (2004) using meta-analytic procedures, based on 151 independent samples, reported the relationship between intelligence and leadership to be 0.21 (corrected for unreliability) and 0.27 (corrected for unreliability and range restriction) across all leadership outcomes. More specifically, the relationship between perceived emergence and intelligence was reported as 0.19 (corrected for unreliability) and 0.25 (corrected for unreliability and range restriction), while the relationships with perceived effectiveness and objective effectiveness were 0.15 (corrected for unreliability) and 0.17 (corrected for unreliability and range restriction) and 0.25 (corrected for unreliability) and 0.33 (corrected for unreliability and range restriction), respectively. Both of these studies support the argument for a dispositional and genetic/biological basis to leadership as well as a need for continued and expanding research in this area.

Second, Chan and Drasgow (2001) conceptualized, developed, and validated a new individual difference construct labeled Motivation to Lead (MTL). Motivation to lead can be defined as, “an individual differences construct that affects a leader’s or leader-to-be’s decisions to assume leadership training, roles, and responsibilities that affect his or her intensity of effort at leading and persistence as a leader” (Chan & Drasgow, 2001, p. 482). This new construct was validated with samples from the United

States as well as Singapore and accounted for incremental variance above and beyond personality, values, attitudes, and general mental ability. The fact that this new individual difference variable generalized across cultural boundaries adds to the imperative of continuing trait/dispositional research in the leadership field as a valuable knowledge-building endeavor.

Third, Smith and Foti (1998) using a pattern approach (i.e., comparing participants high on all included variables, HHH, to participants with other patterns, HLL, LHL, etc.) to assess leader emergence in a multi-variable setting. The variables included in this study were, dominance (facet of extraversion), intelligence, and general self-efficacy. With respect to this approach, participants who were high on all three variables (HHH) emerged significantly more often than all other groups of participants (even those who were high in any two of the three). This approach offers a new and useful way to evaluate the interaction of important traits in the context of leadership research and could be of significant value in a taxonomy that includes both bright side and dark side traits in the same analysis (e.g., are high levels of emotional stability (adjustment in HPI terminology) enough to offset (moderate) the impact of dark side traits).

Finally, Hough and Ones (2001) developed the notion of “working taxons” as an important issue when considering specific (i.e., individual) traits as well as compound traits (i.e., combining lower order traits to produce higher level traits). It is clear from their appendix and recommendations of how FFM traits might be combined to align with certain scales from the Minnesota Multiphasic Personality Inventory (MMPI, “which is the best-known and most highly respected measure of psychopathology in the world”

(Hogan & Hogan, 1997, p. 13)) that this is an approach that might be of value to any investigation, explication, and validation of the dark side personality traits proposed by Hogan and Hogan (1997, 2001).

Although clearly important contributions to the study of leadership, all of these results and methodologies approach the study of leadership from a positive perspective—looking for the predictors of emergence, effectiveness, and universally (cross-culturally) important and effective (Bass, 1997) leadership behaviors. I assert that it is equally important to assess and predict leadership ineffectiveness—this area of leadership research has been neglected for too long. Perhaps a more complete understanding of both leadership effectiveness and ineffectiveness would help provide a more robust framework for investigating dispositional bases for leadership; thus, eliminating some of the inconsistent results across studies and situations (which leads to weaker “true” relationships in meta-analytic studies). Indeed, combining these positive and negative approaches into a more integrative and complete analysis and assessment of leadership would have significant implications to the selection, training, and development of leaders. Leaders can (and do) do a great many things that jeopardize their ability to build and maintain teams over time, why and how this happens is a topic I turn to now.

Several researchers have recently begun arguing for the importance of examining the causes and consequences of leadership failure and the potential benefits to be gained by including measures of dark side traits as antecedents of leadership performance. In line with understanding how these dark side traits might be harmful to a leader’s ability to be successful (i.e., building and maintaining high-performing teams), Bennis (1999) argues that two key competencies for success under the concept of “new leadership”

include generating and sustaining trust and ensuring the leader and the led are intimate allies. In fact, the lack of a critical mass of committed followers leads most assuredly to a lack of performance and ultimate failure (cf. George, 2003; Kelley, 1988; Kouzes & Posner, 2003 for an extended discussion of the importance of followers trust to building/maintaining effective relationships). Building on these notions, Offermann (2004) argues that follower's possess the ability and may be even more likely to derail a leader's career than the leader him or herself. In order to counter the wayward influences of your followers, she recommends, "1) keep the vision and values front and center, 2) make sure people disagree, 3) cultivate truth tellers, 4) do as you would have done to you, 5) honor your intuition, and 6) delegate, don't desert" (p. 58). Additionally, recent work in the area of social support (e.g., interpersonal relationships) further extends the important ramifications that inconsistencies in leader style and behavior can have on organizations.

A recent study by Duffy, Ganster, and Pagon (2002) investigated the link between social support and social undermining and relevant outcomes in the workplace. Social undermining concerns "those behaviors that are intended to hinder, over time, the ability to establish and maintain positive interpersonal relationships, work-related success, and favorable reputation" (p. 332). On the other hand, social support (although not the polar opposite) is behavior that serves to increase interpersonal relations. It is not terribly surprising that the researchers' data supported main effects for both of these variables across a range of outcomes (organizational commitment, counterproductive work behaviors, etc.); however, what is surprising is that the interaction between undermining and support was significant with respect to both active and passive counterproductive

behavior. In essence, leaders who exhibited high levels of both undermining and support with the same subordinate produced the highest levels of counterproductive work behavior. The researchers argue compellingly that a subordinate interacting with an inconsistent leader is anxiety producing and leads to negative outcomes. In line with the findings from the trust research cited above, this research underscores the deleterious effects to subordinates and followers when dealing with unpredictable leaders who are prone to radical shifts in behavior—it seems clear that such behavior is unlikely to inspire trust, confidence, and commitment in followers and will jeopardize the leader’s ability to build and maintain high performing teams. Although this recent work helps frame the need for looking at traits and behaviors that can cause problems for leaders and organizations, it lacks an organizing taxonomy that would allow some of the potential dispositions to be identified, measured, and applied to organizational selection and training/development issues. Hogan and colleagues have attempted to meet these issues head on.

*The Dark Side of Personality—Conceptual Development,
Scale Development/Definitions, and Validity Evidence*

As a result of the early work on derailment by CCL, the late 1980s/early 1990s saw an increase in the number of articles published assessing the following topics: leaders who self-destruct (Kets de Vries, 1989), derailment of “fast-track” managers (Kovach, 1986), and the dark side of charisma (Conger, 1990; Hogan et al., 1990). The common theme throughout these conceptual writings clearly looked at the things leaders were doing terribly wrong—and all of them focused speculation on the internal dispositions that led to these issues from perspectives spanning from psychodynamic

(Kets de Vries, 1989) to organizational (Kovach, 1986). In order to understand this perceived prevalence of self-defeating behavior, I turn to Sigmund Freud—not likely the first name someone would offer as a researcher and scholar who has had a major impact on leadership. However, it is the case that he was one of the first people to think about (and write about) self-defeating behaviors (Hogan & Hogan, 1997). Freud’s exclusive focus on understanding these behaviors from a purely intrapsychic (events occurring in the mind) viewpoint limits the applicability to leadership; however, Horney’s interpersonal approach to studying and analyzing these self-defeating behaviors provides an excellent framework as a starting point for understanding dark side personality traits (Horney, 1950).

The interpersonal theorists posited that to some degree childhood is a stressful time and most people develop some expectation that they will be criticized in certain situations and subsequently feel insecure about something. Hogan and Hogan (1997, 2001) argue for the need to have some sort of organizing taxonomy by which one can begin to classify the range of dysfunctional dispositions people possess. Horney (1950) offered an initial taxonomy of 10 neurotic needs that were later summarized into three overarching themes: 1) moving toward people—managing insecurities by building alliances, 2) moving away from people—managing inadequacy by withdrawing or avoiding others (associated with trait Negative Affect), and 3) moving against people—dealing with self-doubts by behaving in dominant and intimidating ways (associated with trait Positive Affect) (Horney, 1950 as cited in Hogan & Hogan, 1997, 2001). This taxonomy of behaviors is the implicit classification for the DSM-IV-TR, Axis II Personality Disorders (American Psychiatric Association, 2000) and becomes pertinent to

the current effort when one reflects on the characteristics that lead to derailment, incompetence, and failure of leaders, managers, and executives. In fact, these characteristics predicting failure are very similar to the characteristics of the personality disorders (outlined in DSM-IV and presented in Table 3) and serve as the point of departure for the development of the Hogan Development Survey (HDS) which was designed to assess dark side personality traits.

Scale Development & Definitions

According to Hogan and Hogan (2001), HDS dimensions are generally framed by Horney's Taxonomy and the Axis II Personality Disorders and specifically the development of the instrument followed five specific guidelines (see also Hogan & Hogan, 1997). First, the scales are based on the 11 recurring derailments characteristics identified in the research literature. Second, the derailment characteristics were conceptualized as dimensions allowing scores to occur along a continuum rather than relying on type classification. Third, the items written for each dimensions were aimed at tapping the "heart" or key portions of the construct. Fourth, in order to add to the discriminant capability of the various scales, the content overlap between scales was minimized to the extent possible—increasing the between scale independence. Finally, the items were based on every day events and activities. This final guideline ensured the instrument would not be viewed as offensive and invasive as well as removing any concern associated with medical/psychiatric content (in accordance with the Americans with Disabilities Act, 1990). The final version of the HDS contains 168 items that were rationally devised (11 scales with 14 items per scale as well as one 14-item social desirability scale) and are scored dichotomously (either agree or disagree). The scale

scores were normed from an initial sample of more than 2,000 respondents and have been periodically updated (current norms are based on more than 10,000 respondents)—the HDS manual suggests the following guidelines for interpretation: 1) average scores are from 0 – 40th percentile, 2) elevated scores are from 41st – 89th percentile, and 3) high scores are 90th percentile and higher. The following paragraphs define the dimensions, as well as outline the key aspects and implications, for behavioral trends across the scoring categories (Tables 3, 4a, and 5 provide a summary of the dimensions and definitions; all definitions, examples, and interpretation drawn from Dotlich & Cairo, 2003; Hogan & Fernandez, 2002; Hogan & Hogan, 1997, 2001).

Moving Away: Excitable. This scale is derived from Borderline Personality Disorder and is characterized by moody and inconsistent behaviors as well as being enthusiastic about new persons or projects and then becoming disappointed with them. At their best, they exhibit a capacity for empathy and an understanding that life is not always fair—they can genuinely feel others' pain. They tend to be very enthusiastic and work hard, but require a lot of handholding and reassurance because they can be easily disappointed. As scores on this scale increase, others begin to perceive them as inconsistent, critical, unpredictable, and prone to over reactions. At the highest levels (90+ percentile), observers see this person as critical, easily irritated, prone to emotional outbursts, easily upset with people and projects, and when disappointed (which is often because they are always on the look out for this), this person will simply give up, withdraw, and not follow through.

Moving Away: Skeptical. Paranoid Personality Disorder serves as the basis for this scale and concerns people who are cynical, distrustful, overly sensitive to criticism,

and questioning of others' true intentions. Additionally, these people are overly alert to signs of mistreatment and will often take action to defend themselves—they specialize in conspiracy theories. At their best, they are open, cooperative, thoughtful, perceptive, and take criticism well. However, as scores along this dimension increase, others begin to see this person as uncooperative, defensive, and suspicious of authority. At the highest levels, this person can be seen as having a “chip on their shoulder”, easily angered, highly suspicious, and prone to fault finding in others. Although they are often seen as charismatic and visionary, they handle stress by retreating away from people and then attacking without concern for who or what they are fighting.

Moving Away: Cautious. Based on the facets of Avoidant Personality Disorder, this dimension is defined by concerns about resistance to change and a significant reluctance to take any chances for fear of negative evaluation. Although this person might be viewed as a solid corporate citizen, they are often very hard to work with—especially in a dynamic environment. In the average score ranges, this person is seen as unafraid of making mistakes, willing to take chances and express their views, and open to innovation. As the scores increase, they become slower in making decisions, hesitant to try new methods, and in need of encouragement when faced with challenges. These tendencies deteriorate at the higher levels to even more reluctance to make decisions, afraid to make decisions at all, strictly follow policy, and giving up on difficult assignments. These inclinations will also translate to how they lead and manage their people—they tend to become very oriented to micromanaging their people out of fear that one of them might make a mistake and embarrass him or her.

Moving Away: Reserved. Based on the Schizoid Personality Disorder, this dimension focuses on the notion of being socially withdrawn, keeping to oneself, and lacking interest and awareness of others' feelings and emotions (seen by others as aloof and cold). Additionally, these people prefer to work by themselves and appear thick-skinned and unaffected by rejection and criticism. Although they can work well alone, others find them uncommunicative and difficult to deal with in work settings. Oftentimes the displayed detachment allows them to work well and get the job done in the heat of the battle; however, in these times they also ignore the needs, moods, and feelings of others—when they are needed the most by others, they are unlikely to perform those key leadership duties and their staffs and followers are unclear about what to do or what is expected.

Moving Away: Leisurely. The last of the “moving away” dimensions is framed around the Passive-Aggressive Personality Disorder. The dimension is concerned with people who are committed to working on their own time table, abide by their own performance standards, and become irritated with others' pressuring to change or move more quickly (even though they generally mask this displeasure). As the scores increase, this person becomes harder to coach, more uncooperative, and prone to procrastination. At the highest levels, these people are perceived as stubborn, unresponsive to requests, and overvalue their independence. Similar to the skeptical high scorers, these people will retaliate when mistreated, but it is also with a high degree of deniability. Others find these people generally hard to work with due to their continued procrastination, tardiness, and reluctance to be a part of the team.

Moving Against: Bold. The first dimension in the “moving against” category is derived from the Narcissistic Personality Disorder and focuses on an air of arrogance—an overestimation of one’s talents and accomplishments as well as a strong sense of entitlement while managing to ignore shortcomings, blaming mistakes on others, and possessing high but unrealistic career goals. At average and elevated levels, these people are perceived as leader-like, confident, assertive, and charismatic. However, at the more extreme levels, these behaviors shift much more clearly to a self-promotion agenda that is often pursued through intimidation of followers and a clear inability to foster a sense of teamwork and loyalty. It is not uncommon for these people to quickly attract and engage followers, but they generally alienate them just as quickly, especially under high levels of stress and pressure.

Moving Against: Mischievous. This dimension has its roots in the Antisocial Personality Disorder and is characterized by a general tendency to appear charming, friendly, and fun loving, but also excitement seeking, impulsive, and non-conforming. Problems begin as the scores elevate and these people view others as instruments to be exploited and used which leads to significant problems maintaining relationships and inspiring trust and confidence in those around them. Additionally, they often function under a pleasure maximization principle and generally do not evaluate fully the consequences of their actions; this, in turn, leads to perceptions of invulnerability and recklessness. Of significant note, is the near complete inability to learn from past mistakes, not a quality that generally leads to long-term success.

Moving Against: Colorful. At its heart, this dimension identifies people who want to be the center of attention and it is formed from the Histrionic Personality

Disorder. At the average levels, these people are seen as quiet, modest, unpretentious, and preferring to be behind the scenes, this all changes as the scores reach elevated levels. These individuals become more interested in being lively, entertaining, and interesting. They are active without being productive, unfocused, and easily distracted. Even at the high scores, these people still appear leader-like, able to manage crisis, and possessing multi-tasking capabilities even though they may not be accomplishing much. Generally, these people perform very well in interview settings and sales jobs, but others find them difficult to work with because of their impulsivity, disorganized interactions, and general proneness to be distracted.

Moving Against: Imaginative. The final “moving against” dimension is based on the Schizotypal Personality Disorder and reflects a tendency to act in unusual, different, striking, and odd ways. Although they are constantly finding new and interesting ways to think about things, they often leave others confused and unsure about what direction the unit or organization should be moving. At elevated levels, new and innovative ideas continue to flow freely, but few are ever implemented or adopted because these people are easily distracted or bored and move on to the next great idea. They are often described as eccentric and tend to be totally unaware of how their actions affect others due to their single-minded focus on their own ideas and agendas.

Moving Toward: Diligent. The first dimension of the “moving toward” theme in the HDS is based on the Obsessive-Compulsive Personality Disorder and people who are unusually conscientious, orderly, and attentive to detail. Although very organized, planful, and hardworking, others can find these people very difficult to work with because they are overly picky, critical, and stubborn. These tendencies can lead to

creating excess stress for the individual as they try to do too much and do not delegate—this eventually leads to decreased effectiveness on all tasks. At the extreme levels, these people are seen as critical, controlling, inflexible, and reluctant to delegate. In addition to creating more stress in dynamic times, this category of behavior also deprives others of the opportunity to learn and develop.

Moving Toward: Dutiful. The final scale in the “moving toward” theme, as well as the HDS, is formed around the Dependent Personality Disorder—this dimension is concerned with the tendency to be eager to please others, gain approval, and defer to their judgments in order to maintain social and relationship harmony. These people tend to be alert for signs of disapproval, especially with authority figures, and look for chances to ingratiate themselves and show loyalty. Others often see average levels of this dimension as agreeable, pleasant, and compliant; however, at the elevated and high levels these perceptions change to notions of indecision, conformity, inability to act independently or make decisions, and an unwillingness to stick up for subordinates. At the organizational level, these people tend to rise but often have trouble guiding, supporting, and leading teams because of their unwillingness to make decisions or take a stand when it is needed. As noted by Van Velsor and Leslie (1995), over time this dependency on a particular supervisor or mentor seems to be less of a factor for derailment as compared to the other categories of behavior. Having outlined how the scales of the HDS were developed and what they purport to measure, it is important to review the validation and empirical evidence to understand if, and how well, the instrument performs, in practice.

Validation Evidence for the HDS

In order for an instrument to be useful (practically and scientifically), it is important to establish that the instrument is both valid (measuring what it claims to measure) and reliable (measures the same thing consistently across people and time). The following section reviews the validation evidence for the HDS and is similar to the development and definitional issues; the majority of the validity evidence is contained in the HDS User's Manual (Hogan & Hogan, 1997) and Hogan and Hogan (2001). Some of the information reported by Hogan and Hogan (2001) extends the evidence found in the manual while portions of the validation study reported in the *International Journal of Selection and Assessment* (Hogan & Hogan, 2001) is a restatement from the manual (i.e., the convergent validity evidence with the MMPI). The initial validation information was based on approximately 2,000 respondents information and these people ranged from employed managers to job applicants to job incumbents to students to incarcerated felons! The Hogan and Hogan (2001) information contains a larger database of respondents, in some cases the samples exceed 10,000 with the majority of these being employed, working adults.

HDS Reliability. Cronbach's Alpha (Cronbach, 1951) estimates across the scales ranged from 0.50 to 0.70 with an average of 0.67. In the 1997 data, the lowest scale, Dutiful, was 0.50 and the highest scale, Excitable, was 0.78. With respect to consistency over time, test-retest reliabilities with a sample of 60 graduate students over a three-month time period ranged from 0.58 (Leisurely) to 0.87 (Excitable) with an average value of 0.75 (Hogan & Hogan, 1997). Generally, these values are very much in line with the kinds of values we expect to see from these categories of instruments.

Additionally, there are little to no difference between demographic groups (i.e., male/female, black/white, or age—less than 40 years old/40+ years old).

HDS Validity. Assessing an instrument's validity is a more complex endeavor, but generally these investigations attempt to show convergence with similar measures as well as divergence with dissimilar measures. The first step was an attempt to validate the underlying taxonomy (i.e., Horney's Taxonomy). The pattern of zero-order correlations supports the underlying taxonomy—the scales within each theme (i.e., moving away correlate more highly with one another than with scales from the other themes).

Additionally, a principal components analysis of the 1997 data reproduced the Horney's 3-factor Taxonomy with appropriate loading—the 3-factor solution accounted for 62% of the variance in the 1997 data and 59% of the variance in the larger 2001 data. As further evidence, Hogan and Hogan (2001) report the intercorrelations between the HDS scales and the HPI (FFM traits). As expected, the “moving away” scales associated with Negative Affect are highly related to the HPI trait of adjustment (Neuroticism), the “moving against” scales are related to the HPI traits ambition and sociability (which map to Extraversion and Positive Affect), and “moving toward” has its highest correlations with Prudence (Conscientiousness). Interpretation of the correlations between HDS and HPI (FFM) is particularly useful (and easier) if the HDS traits are viewed as extensions of normal personality traits—in both directions (Hogan & Hogan, 2001). Furthermore, a recent investigation by Furnham and Crump (2005) using a managerial sample (N = 858) provided supporting evidence both for the general factor structure of the instrument as well as relationships between FFM traits (as measured by the NEO-PI; Costa & McCrae, 1992) and the HDS scales. Moreover, when regressing the emergent factors from the

HDS onto the five traits significant variation in all traits was accounted for with Adjusted R^2 s ranging from 0.51 for extraversion (the largest) to 0.20 for agreeableness (the smallest).

Perhaps the most compelling convergent validity evidence cited comes from the correlations of the HDS scales with the MMPI scales designed to measure the personality disorders. Fully six of the eleven HDS scales have their highest correlation with the associated MMPI Personality Disorder Scale (i.e., Excitable correlates 0.67 with the Borderline Scale, higher than it does with any other MMPI scale). Three of the additional scales are nearly the highest correlation (in the top 3) for the associated MMPI marker scale. Only two, Diligent and Dutiful, do not match as well to their associated MMPI marker. However, a caution is in order when interpreting these results—the sample for this analysis consisted of incarcerated felons who were being housed by the State of Oklahoma. One final set of analyses is reported to further support the external validity of the HDS. Using a sample of 193 managers, observers (superiors) used a 150-item behavioral description questionnaire to rate the frequency of the individual's behaviors across a wide variety of situations (i.e., “yells at people when they make a mistake”, “engages in horseplay”, “is self-restrained”). The frequency of managerial ratings showed strong (and significant) linkages to managers' HDS scores. For instance, scores on the Excitable scale were correlated 0.30 with frequency ratings of “yells at people when they make mistakes” and the Bold scale correlated -0.20 with the statement “is a follower.” Extending this work, a sample of spouses ($N = 61$) and executive coaches ($N = 54$) used a 107-item behavioral characteristic measure to rate the frequency of the client/spouse's behavior. Again, these scores were correlated with managers' HDS

scores and the results showed strong support for the underlying themes of the HDS scales as well as strong convergence between coach and spouse's ratings. The clear implication is that high HDS scores are consistently seen and noted by observers who know the person well. Not only does this extend the external validity of the scale, but it also has very clear implications for how observers at work (in team settings) will see these people (Hogan & Hogan, 2001).

Current Empirical Research Linking HDS Dimensions to Leadership Dimensions.

A search of several article databases yielded exactly zero published studies that have used the HDS as a means to directly evaluate the relationships between the dark side dimensions and objective (or subjective) leadership effectiveness. As the instrument continues to be implemented and used more empirical evidence will be accumulated to better assess the convergent and divergent validity as well as the practical utility of the instrument. For example, at a recent conference, Hogan Assessment Systems presented meta-analytic results demonstrating the incremental validity of adding dark side traits to FFM traits across all leadership and performance domains included in the samples (Davies, Hogan, Foster, & Elizondo, 2005). A recent search for published studies using the HDS as a measure in the research design identified one published study (Furnham & Crump, 2005); however, several conference papers and presentations were located. Najar, Holland, and Van Landuyt (2004) and Fleming (2004) presented results at the 19th Annual Conference of the Society for Industrial and Organizational Psychology (SIOP) along with Fecteau, Elizondo, and Van Landuyt (2005) and Davies, Hogan, Foster, and Elizondo (2005) at the 20th Annual SIOP Conference.

Najar et al. (2004) presented data showing significant correlations between several of the HDS scales and 11 interpersonal performance factors and 4 leadership performance factors (all in the negative direction). Interestingly, two sets of ratings for the performance factors were obtained (supervisor and peer ratings) and differential impact based on rater category was supported. For instance, all correlations with the bold scale (narcissistic) and manager ratings were nonsignificant while 50% of the peer-rated relationships were significant, indicating that the rated managers are engaging in some sort of behavioral control or impression management tactics. These findings underscore the importance of multi-source ratings when evaluating the impacts of dark side characteristics. These initial findings suggest the use of dark side characteristics offer a useful way to think about leadership performance and prediction. Fleming (2004) using a similar sample of managers evaluated the ability of the HDS to account for significant incremental variance beyond demographics (gender and race), critical thinking ability, and normal FFM personality traits in leadership performance ratings. Across all four leadership factors (business, people, results, and self), the HDS scales accounted for an additional 7% - 10% incremental variance (all values significant $p < 0.05$).

Facteau et al. (2005) reported general support for predicted relationships between HDS dimensions and measures of leadership and more general performance measures. Additionally, regression analysis showed significant variance accounted for by these same measures. However, this study did not employ any measures of bright side (normal) personality, so it is impossible to know if these results are a function of simply accounting for the same variance as the FFM measure might account for or if the dark side traits would account for incremental variance beyond the bright side traits. In a

similar vain, Moscoso and Salgado (2004) evaluated the impact of 10 dysfunctional personality styles, as measured by the Cuestionario de Estilos de Personalidad (CEP). The CEP was developed similarly to the HDS with the Axis II personality disorders as the conceptual base for the instrument's scales. The authors hypothesized relationships between these dysfunctional personality tendencies and task, contextual, and overall job performance based on a sample of 85 managers. Generally, the results supported the hypotheses and yielded moderate correlations (ranging from 0.20 – 0.40).

Interestingly, Fecteau et al. (2005) also found some positive relationships (small to moderate correlations) between some of the scales and leadership. In particular, the scales related to narcissism (bold), antisocial (mischievous), and schizotypal (imaginative) had positive relationships suggesting that some level of willingness to put oneself “out there,” taking risks, and inspirational, creative thinking and speech relate to leadership. On the other hand, extreme scores on these scales would likely lead to a decrement in performance. In fact, Maccoby (2000, 2003) argues that many successful leaders have strong narcissistic tendencies that lead to their success; however, when taken too far, these very same tendencies that generated success can ultimately lead to disastrous failure. Taking this argument into account, the reported relationship may indicate a curvilinear relationship between some of the dark side scales and leadership performance. One major limitation of this study is that the researchers did not include a measure of normal personality in this study; therefore, it was not possible to investigate the potential incremental variance being accounted for with these dark side measures. Taken together, these initial findings suggest continuing to evaluate the HDS (and similar measures) as a selection and training tool is a promising and important endeavor—being

able to account for variance in more general leadership behaviors (structure and consideration) and job performance (task and contextual) above and beyond normal personality measures would be an important finding and is a significant portion of the current research effort.

Does the HDS Measure Personality Disorders? Having reviewed the development, definitions, and empirical validation evidence for the HDS, a key question worthy of careful consideration is whether or not the scales of the HDS are actually measuring personality disorders? Unfortunately, the current empirical evidence does not allow for a definitive statement related to this topic; however, it is possible—based on current understanding of the personality disorders and the HDS—to make some general assertions (a detailed review of disorders and psychopathology is included in the next section). A thorough review of the DSM-IV criteria for diagnosing personality disorders delineates a very strict set of criteria, both generally for all personality disorders, and specifically for each individual disorder that are not totally congruent with the items developed for the HDS. For instance,

The diagnosis of personality disorders requires an evaluation of the individual's long-term patterns of functioning, and the particular personality features must be evident by early adulthood. The personality traits that define these disorders must also be distinguished from characteristics that emerge in response to specific situational stressors or more transient mental states. (American Psychiatric Association, 2000, p. 686)

These requirements are at odds with both the intent and content of the items in the HDS. Instead, the goal of the instrument is to identify those characteristics or tendencies possessed by individuals that are similar to, or in the direction of, the personality disorders without meeting the stringent diagnostic criteria. Indeed, the HDS targets an understanding of behaviors in stressful or transient situations and mood states—a direct violation of the diagnostic criteria. Furthermore, in clinical terms, the HDS attempts to identify behaviors that would be classified as operating at a level that is referred to as sub-syndromal. In these terms, a clinician assesses a client as someone who exhibits traits, features, characteristics, tendencies, or some combination of these categories, but still fails to meet the diagnostic criteria for personality disorders (R. Jeffrey Jackson, personal communication, May 14, 2005). Clearly, empirical research designed to gain a thorough understanding of the relationships between normal (FFM) personality traits and the HDS scales as well as between instruments designed to assess personality disorders and the HDS scales would add significantly to the understanding of exactly what the HDS scales are measuring.

Linking Bright and Dark Side Personality to Leadership

Having reviewed the long history of leadership research, the role of FFM traits (and other individual difference variables), and the potential role dark side personality traits could play in a leadership research paradigm, this section shifts its focus to developing a theoretical argument for what researchers might expect when linking bright and dark side personality to leadership effectiveness. Additionally, this chapter of the thesis concludes with a broad specification of the potential research areas and questions that require investigation. Although I have argued earlier in this discourse that the dark

side personality traits are not the same as personality disorders, a brief review of the history of personality and psychopathology will help to inform the theoretical framing of the specific research at hand.

*Personality and Psychopathology*⁴

The study of personality disorders and psychopathology has a history that is not dissimilar to the conceptual development and duration of personality psychology. The field has its roots with Freud and psychoanalytic approaches with the recent evolution turning to contemporary approaches that include categorical models based on the DSM-IV, Millon's biosocial learning typological model, interpersonal models, and dimensional models (Morey, 1997). Regardless of the particular model one ascribes to, it is clear that, "maladaptive personality traits are given special status by the American Psychiatric Association's DSM-IV by being placed on a separate 'axis' that requires that clinicians assess for the presence of personality disorder in virtually every patient" (Widiger, Verheul, and van den Brink, 1999). In order to better understand the magnitude of this statement, a brief review of the multiaxial assessment procedures of DSM-IV is provided.

DSM-IV's Multiaxial Approach. Prior to DSM-III only one diagnosis was offered; however, moving forward five separate evaluations are made on each and every patient. Axis I focuses on the clinical syndromes, Axis II the personality disorders, Axis III reviews physical symptoms that might be related to the disorder, Axis IV reflects the psychosocial stressors that might be related to either the onset or course of the problems, and Axis V directly reflects the current level of the person's adaptive functioning and symptomatology. The use of this particular diagnostic protocol forces a specific,

⁴ This brief review is not intended to be exhaustive; the interested reader is directed to Maher and Maher (1994), Morey (1997), and Widiger, Verheul, and van den Brink (1999) for more complete coverage.

qualitative differentiation between trait disturbances and the earlier, single axis, classification approach. On the one hand, trait disturbances (personality disorders like borderline or antisocial personality disorder) are viewed as long-standing, inflexible, maladaptive, and causally linked to impaired functioning or distress. On the other hand, the manifestations of the more traditional clinical disorders (e.g., anxiety disorders and depression) are viewed as more temporary—they do not result in continuous distress or impaired functioning and they do not meet the enduring and pervasive criteria of the personality disorders (American Psychiatric Association, 2000; Morey, 1997). Although this shift has provided heuristic benefit in classifying and diagnosing, it is not without its limitations and shortcomings and for this reason has led to other conceptualizations of personality disorders—the majority of which are based on a dimensional approach that asserts personality disorders as an extreme of a normal personality function that can be represented on a continuum (Morey, 1997; Widiger et al., 1999). With a brief explanation of the multiaxial approach in hand, I turn now to a review of the theoretical approaches to personality disorders.

Dimensional and Interpersonal Approaches to Personality Disorders. Both the interpersonal and dimensional approaches to studying personality and personality disorders offer important information to the current research efforts. The interpersonal approach is rooted in a tradition of thought arguing that personality development is impacted more by social and cultural factors than by biological or instinctual. The most important benefit of this approach is that it offers both a descriptive and prescriptive approach to personality disorders. In fact, the clear assumption in this approach (although there is some dispute) is that personality disorders are “dysfunctional primarily

through their expression in the social milieu” (Morey, 1997, p. 937). These interpersonal disruptions are the very thing Horney’s tripartite theory addresses. It is not without foundation that I would expect to find significant relationships between the HDS scales and organizationally relevant outcomes (i.e., job and leadership performance), given the clear parallel between these neurotic needs, and associated themes (moving away, moving against, moving toward), identified by Horney (1950) that often lead to interpersonal interruptions in the “social milieu.”

Turning to the dimensional approach, also commonly referred to as spectrum relationships, I consider an approach where personality and personality disorders sometimes fail to be distinct conditions (Widiger et al., 1999). Widiger and Costa (1994) demonstrated that there is significant overlap between FFM traits and personality disorders with a particular emphasis on neuroticism as the predominant relationship and extraversion as also important (cf. Furnham & Crump, 2005; Widiger, Costa, & McCrae, 2002; Widiger, Trull, Clarkin, Sanderson, & Costa, 2002). Additionally, Miller, Lynam, Widiger, and Leukfield (2001) in a study of 481 college-aged men and women (normal population) found strong relationships between NEO-PI-R scores and an expert-based psychopathology profile created from the FFM and associated facet scales. In general, overall trait scores on neuroticism, extraversion, and agreeableness and the facet scales were significantly related to the prototype. A related contribution is found in Reynolds and Clark (2001) who report results from a clinical sample (N = 94) supporting the need to include facet measures as a means to increase predictive ability of personality disorders. In fact, the authors argue for a broader use of more precise, fine-grained traits to capture important variance. As Widiger et al. (1999) point out, there is a great deal of

research both supporting and opposing the causal relationship link from personality to psychopathology. Disentangling the myriad effects, antecedents, and determinants is a formidable endeavor, but one that continues to be an important question and area of study that will assuredly continue to be informed by additional research and progress (cf. O'Connor, 2002).

Although the preceding discussion ranged outside the normal areas of emphasis in I-O psychology, I contend that consideration of this literature provides important information to inform the current research and better understand the types of relationships we should expect. But the question remains, what can an I-O psychologist studying leadership take from all of this? Indeed, there is much here to inform our pursuit of better understanding the role of dark side traits, as well as, how they might be combined and implemented in organizational settings. Two specific conclusions can be drawn at this point. First, research has supported the notion that specific FFM traits do have significant relationships to specific personality disorders. In particular, neuroticism, extraversion, and agreeableness exhibit primary roles. In line with the specific propositions and findings (Bagby, Costa, Widiger, Ryder, & Marshall, 2005; McCrae, Lockenhoff, & Costa, 2005; Widiger et al., 2002) in this literature, this research can expect to uncover strong, primary links between the same FFM traits and the measures of dark side personality traits. Additionally, given the HPI uses a 7-factor model (that is closely linked to the FFM, see Figure 1), there is an additional opportunity to see if the more fine-grained distinction of extraversion (into ambition/dominance and sociability) will show a more robust linkage to the dark side traits. One final important piece of research underscores the importance of the role of FFM traits in this investigation. Markon,

Krueger, and Watson (2005) in a two-study sequence provided strong support that the structure of normal and abnormal personality can be represented with a hierarchical structure. At the highest level, Digman's (1997) factors alpha and beta emerge and the empirical results, using both meta-analytic procedures and a primary study, show support from this 2-factor solution, through common 3- and 4-factor solutions of abnormal personality to a final link with the FFM (Markon et al., 2005). Of particular interest is the result that neuroticism, extraversion, and agreeableness show the strongest links to the higher-order, superordinate factors in the model.

Second, the link between bright side and dark side traits with respect to organizational outcomes of interest might well be specifically related to what part of the continuum we target with our measures. In fact, it sets the stage for the ability to think about a range of traits moving from those commonly represented by FFM measures, to those similar to the HDS, and all the way to those measured with the MMPI or Million Clinical Multiaxial Inventory (MCMI; Million, 1987). In this regard, it would be interesting to note where along this continuum researchers need to be in order to derive incremental benefit from including these dark side measures in selection and development contexts. In order to answer this question, one might investigate a range of instruments that have been developed based on different objectives. For instance, the Global Personality Index (GPI) is a 300 item, 37-scale instrument that is entirely based on a model of normal personality and this includes the 5 scales to assess leadership derailment (see Table 4b; ePredix, 2001; Schmit et al., 2000). At the other end of the continuum, one can consider instruments like the MMPI or the Psychopathy Checklist (PCL; Hare, Harpur, Hakistan, Forth, Hart, & Newman, 1990; Harpur, Hakistan, & Hare,

1988; Harpur, Hare, & Hakistan, 1989) that have as their express purpose identifying psychopathology or mental disorder. The PCL was designed to assess psychopathy in criminal populations. Both the original version as well as the revised version are considered a well validated and reliable instrument composed of two factors; factor 1 focuses on core personality traits and factor 2 focuses on chronically unstable and antisocial lifestyle (Hare et al., 1990; Harpur et al., 1988, 1989). Although the popular press thinks immediate implementation of this instrument in the corporate world is justified (Deutschman, 2005), it is unlikely that such an instrument would withstand the scrutiny imposed by the Americans with Disabilities Act (ADA). However, another instrument, the B-San (Babiak, 2005), which is conceptually based on the PCL model is currently being validated and will soon enter the assessment marketplace (Morse, 2004); it is unclear whether the clinical nature of this “new” instrument will be seen as a medical examination under the provisions of ADA.

In between these two categories of assessment, in a space referred to as the “middle space”, resides the HDS. By its very development goals and validation evidence, it assesses sub-syndromal manifestations of the Axis II personality disorders. The goal is to provide an assessment that identifies tendencies toward dysfunctional interpersonal behaviors (Hogan & Hogan, 1997, 2001). In line with the dimensional approach to assessing disorders and the recommendation of Reynolds and Clark (2001), the scales of the HDS that exist in this middle space might be precise and fine-grained enough to add incrementally over the traditional FFM traits. At present, validity evidence and data are not available for the extreme end of the continuum (i.e., B-San),

but both GPI and HDS data, coupled with normal personality measures, are available to begin to investigate this question.

Toward a Model of Managerial/Leadership Effectiveness

As I outlined at the beginning of this thesis, researchers are often quite vague with their definition of leadership and leadership effectiveness; in fact, this vagueness is one of the things that hampers the progress of research in this area. The need to have a better understanding of the underlying structure of leadership and leadership effectiveness is not entirely different from the common lament in the I-O field that our understanding of job performance is plagued by this same problem. In fact, Campbell and colleagues have continually called for more research and focus on the criterion side instead of solely focusing on the predictor side of the equation (see Campbell, 1990; Campbell, McCloy, Oppler, & Sager, 1993; Campbell, Gasser, & Oswald, 1996; cf. Bartram, 2005). This call for research focuses on the need for a theory of job performance and it is not dissimilar to the need for leadership researchers to develop a theory of leadership effectiveness.

Indeed, much like job performance, leadership is a multi-dimensional construct that requires further extrapolation. To be clear, the idea is not necessarily that there is only one model that will suffice (e.g., several models of job performance exist), but that researchers must be clear in their explication of the model they invoke. The ensuing discussion reviews several models of managerial effectiveness as a means to outline the specific model that will be endorsed in the present research.

Borman and Brush (1993) Managerial Performance Taxonomy

In an attempt to specifically delineate the managerial performance domain, Borman and Brush (1993) undertook a study to pull together the existing literature on

managerial performance. The task at hand was a formidable one given the state of the literature at the time. The majority of the existing literature had focused on three broad areas: 1) functions, roles, or behaviors, 2) traits and skills, and 3) decisions of managers. To complicate matters further, most of the studies were carried out with a very narrow focus, small samples, and in only one organization. The stated goal of the research was to, “derive inductively a taxonomy of managerial performance requirements from the many empirical studies of manager performance” (Borman & Brush, 1993, p. 1). A total of 187 empirically derived dimensions were collected from more than 26 dimension sets. Employing factor analytic techniques of similarity ratings by subject matter experts, the researchers proposed a set of 18 “mega-dimensions” as well as four overarching themes for these dimensions. The overarching structure referred to as the “broad-brush taxonomy” included the following: interpersonal dealings and communication, leadership and supervision, technical activities (i.e., the “mechanics of management”), and useful personal behaviors and skills. More specifically, each broad category is represented by some combination of the 18 mega-dimensions identified (each mega-dimension is aligned with only one broad theme). For instance, interpersonal dealings and communication includes: persisting to reach goals, handling crisis and stress, and organizational commitment. Leadership and supervisions was composed of guiding, directing, and motivating subordinates and providing feedback; training, coaching, and developing subordinates; coordinating subordinates and other resources to get the job done. Technical activities included planning and organizing, technical proficiency, administration and paperwork, decision making/problem solving staffing, monitoring and controlling resources, delegating, collecting and interpreting data. Finally, useful

personal behaviors and skills subsume the dimensions of persisting to reach goals, handling crises and stress, and organizational commitment.

With the dimensions identified, Borman and Brush (1993) compared their dimensions with six other, well-established taxonomies of managerial behavior and effectiveness. This comparison showed that one of the mega-dimensions was absent from 3 of the models and 7 of the mega-dimensions were absent from two of the six taxonomies evaluated. On the flip side, only 3 dimensions from the 6 taxonomies in the comparison group lacked a content match to one of the mega-dimensions identified in the study. The four themes and 18 mega-dimensions that emerged from this research may not represent the “best” taxonomy, but it does have the benefit of being derived from data across a wide variety of jobs and organizations.

Yukl and Colleagues Managerial Practices Survey (MPS)

A precursor to the Managerial Practices Survey was included in the Borman and Brush (1993) analysis described above; however, given the modifications to this early version and some recent emergent evidence, it is included here as another useful taxonomy. The taxonomy created by Yukl and colleagues is predominantly based on factor analytic procedures, but it has also been fine-tuned with subjective judgmental classification and theoretical deduction. The taxonomy of behaviors, referred to as managerial practices contains the following 14 categories: planning and organizing; problem solving; clarifying roles and objectives; informing; monitoring; motivating and inspiring; consulting; delegating; supporting; developing and mentoring; managing conflict and team building; networking; recognizing; and rewarding (Yukl, 2002; Yukl, Wall, & Lepsinger, 1990). Kim and Yukl (1995) investigated several meaningful

questions relating the MPS to leadership effectiveness. In fact, strong, positive relationships were reported linking these 14 behaviors to effectiveness ratings from bosses and peers. All 14 of the subordinate-described behaviors were positive and significant, and 10 of the 14 self-reported correlations were significant. Ultimately, Kim and Yukl (1995) recommend, “managers need to be aware of the broad range of behaviors that are relevant for increasing the performance of their work unit ... [S]uccessful managers weave together several mutually complementary behaviors to achieve a high-performing team” (i.e., the end of leadership; p. 375).

Although the initial work of Yukl and colleagues did not propose overarching themes for the 14 dimensions (like the Borman & Brush Taxonomy), a quick review of the dimensions suggests a significant degree of overlap with the 4 themes of Borman and Brush and even a more direct relationship to the ubiquitous leadership factors of initiating structure and consideration (cf. Tett, Guterman, Bleier, & Murphy, 2000). However, later work by Yukl (1999, 2002) does explicitly link the behavioral dimensions to overarching themes. The three themes identified are: task oriented, relations oriented, and change oriented. This three-factor grouping accounted for 55% of the item variance from ratings of 48 managers by 318 direct reports across a broad range of measures (not just the MPS; Yukl, 1999). Specific to the MPS, the planning and organizing, clarifying roles and objectives, and monitoring dimensions loaded on the task factor while the dimensions of consulting, delegating, supporting, developing and mentoring, and recognizing loaded on the relations factor. Since the MPS was not developed with a change oriented factor in mind, no single dimension loaded directly to this factor; however, several items from the problem solving, motivating and inspiring, and

networking dimensions did load on the change factor. These results argue for the need to ensure task, relations, and change dimensions are included in any model of managerial effectiveness. Perhaps most importantly, one must recognize that these factors are not orthogonal, but rather can best be conceptualized as occupying a 3-dimensional space (Yukl, 2002).

Hogan and Warrenfeltz's Domain Model

The final taxonomy, proposed by Hogan and Warrenfeltz (2003) is situated as a more general model, “[the] taxonomy is exhaustive in that it can account for all of the existing competency models” (p.74), with the goal of being able to frame managerial education and learning outcomes consisting quantitatively (i.e., having learned a lot) and qualitatively (i.e., having learned the right things). The model is structured temporally or as a building block approach moving from the intrapersonal domain, to the interpersonal domain, to the leadership domain, and finally to the business (work) skills domain. Moreover, these domains represent overlapping content areas with the later domains (leadership and business) being dependent on skills acquisition at the lower levels (intra- and interpersonal). To be clear, this model defines a competency according to McClelland and colleagues as, “a performance capability that distinguishes effective from ineffective managers in a particular organization” (p. 78). Although this model does have characteristics that underlie each level of the hierarchy, it is different from the other taxonomies reviewed in that the characteristics, even though they are precise, are more broadly construed to allow different specific measures to be classified in the appropriate domain. The intrapersonal domain is a function of core self-esteem, attitudes toward authority, and self-control. Importantly, people functioning at high levels in this

domain project one of the most important factors of success—integrity (cf. Gough, 1990). Next, the interpersonal domain consists of four components: a disposition to imagine oneself in the place of another; being able to “get it right” when anticipating another’s expectations; incorporating these expectations into one’s behavior; possessing the requisite self-control to stay focused on another’s expectations. According to Hogan and Warrenfeltz, “people with interpersonal skills seem charming, poised, socially adept, and rewarding to deal with” (p. 79). In this context, leadership is defined closely to what was specified earlier in this chapter—ultimately, it is being able to accomplish the means and ends of leadership. Specifically, this occurs through five components and depend on both intra- and interpersonal skills: recruit and attract talented people; retaining talented people; motivating the team; developing, projecting and promoting a vision; and being persistent and hard to discourage. In many respects, these components parallel the arguments by Collins (2001) that the first question leaders of great companies ask is who, not what. It is important to be sure you have the wrong people out of the organization and the right people not only in, but also in the right place. The final domain is business skills. Generally, these skills are more dependent on cognitive ability and include activities like planning, forecasting, cutting costs, mapping strategy, and other similar skills.

Taken as a whole, the three taxonomies reviewed provide general convergence in a very important way—they generally highlight the important requirements of managerial/leadership effectiveness. Although some of the specifics may be slightly different, in particular the Borman & Brush and Yukl models differing from the Hogan and Warrenfeltz model with respect to the underlying dimensions, the Domain Model

offers the advantage of being broader in its ability to classify various existing outcome measures and taxonomy according to its hierarchical structure. Table 6 provides a summary of all three models and attempts to situate the various models with the similar factors in rows across the table. For example, a clear linkage exists between the technical skills of Borman and Brush, the task and change oriented factors of Yukl, and the business skills of Hogan and Warrenfletz. Ultimately, these taxonomies converge on the ubiquitous task and relationship factors that have been a major part of the leadership literature for more than 50 years and are also linked to Bales (1954) concept of dual leadership. His review and summary of the early work on group decision making at the Laboratory of Social Relations at Harvard argues that both task and social leadership are required in group settings. It is true that as leadership theory has evolved, the newer taxonomies view these factors more broadly. For example, the fast-paced, global nature of leadership and management calls for an increased focus on innovation, flexibility, strategy and other change related competencies. But, at the end of the day, these skills are part and parcel of being successful in this new environment and are intricately related to the task and relationship factors that are so integral to management and leadership success.

One notable exception to the move to a more general hierarchical model of managerial effectiveness is Tett et al. (2000) who argued for a hyper-dimensional taxonomy with greater specificity to meet managerial challenges and demands. A content analysis of 12 published taxonomies yielded a structure consisting of 9 themes and 53 managerial competencies with the explicit argument that it is at this level of 53 that the most benefit can be derived. From a theoretical view, I agree that this more

specific set of dimensions can be useful in evaluating performance; it seems practically untenable to suggest there is an imperative to evaluate every manager or leader across all factors. Indeed, when these authors turn to the implications of this research to leadership, they return to a structure based on the general task and relationship, two-factor, distinction. They propose three dichotomies to arrange the 53 dimensions; the dichotomies include initiating structure and consideration; authoritative leadership and participative leadership; and transactional leadership and transformational leadership. They also argue that no one dimension can be considered as both inclusive of task or relationship-oriented leadership styles. In my view, it is possible to place each of the 53 dimensions into the corresponding domain of the model proposed by Hogan and Warrenfeltz. Being able to reclassify and recategorize managerial and leadership effectiveness measures based on this taxonomy goes a long way to provide a much needed framework of effectiveness that contains significant impact to selection, promotion, and development.

The Role of Socioanalytic Theory

The final important element to framing the current research endeavor is to consider the meaningful contributions that a specific personality theory can make to understanding and predicting the specific impacts both bright and dark side traits can have on leadership effectiveness. One real benefit to this approach naturally flows, again, from the job performance literature. Campbell (1990) argued both that job performance is a multi-dimensional construct and that aligning predictors with the proper dimensions would undoubtedly improve our ability to predict—consequently improving the validity of our instruments. Indeed, the preceding discussion of managerial and leadership

effectiveness explicitly defines the criterion as multidimensional; therefore, aligning predictors and criterion would be beneficial. Socioanalytic theory is one way to organize the development of these proposed relationships (i.e., predictor-criterion matching). In the present research, I invoke the socioanalytic theory of personality to better frame, a priori, the types of relationships one can expect.

In very broad general terms, the goal of personality psychology is to frame and evaluate human nature. However, when one searches for a definition of personality it is quite possible that you might think you are searching for a definition of leadership because almost every author has their own definition, and the definition is based on their theoretical leanings. For instance, researchers with interests in social or interpersonal influence will likely focus their definition on these issues, while researchers with a biological interest will focus there; indeed, it is important to understand the underlying theory in order to make sense of the definition (Hall, Lindzey, & Campbell, 1998). Hogan (1991) points out that there are two important distinctions that need to be kept in mind with respect to definitions of personality. On the one hand, personality refers to a person's social reputation and how other people perceive them—this is personality from the observer's perspective. On the other hand, personality can also be used to refer to those innate, inner structures that are responsible for the ways a person thinks, feels, and behaves—this is personality from the actor's perspective (Hogan & Shelton, 1998).

Socioanalytic theory as described by Hogan (1983, 1996) is rooted in interpersonal psychology and focuses on explaining individual differences in career success. The theory is based on five broad contentions: 1) people evolved in groups and still live in groups; 2) all groups have a status hierarchy that sets the rules; 3) status and

acceptance are the primary motivators of people, consciously or unconsciously; 4) social interaction is the basis for achieving all goals; 5) the need for status and approval can cross purposes. This leads to three generalizations: first, people need to feel liked, accepted and supported; second, people want power and control of resources for status reasons; third, people like to live their lives in predictable, orderly, sensible ways (Hogan & Shelton, 1998). Indeed, this theoretical framework led Hogan and Holland (2003) to argue that with respect to this theory of human nature and organizational behavior, people are motivated by two compelling forces: the need to get along (social acceptance) and the need to get ahead (achieve status). Furthermore, these motivations manifest themselves in social interactions in different ways and with different personality trait antecedents. Their results, based on meta-analytic procedures of more than 40 independent samples and 5,000 people, indicate that the aligned predictor-criterion relationships surpass that of other atheoretically driven meta-analyses. Specifically, estimated true validities were 0.43 (emotional stability), 0.36 (conscientiousness), 0.35 (extraversion), 0.34 (agreeableness), and 0.34 (openness to experience). The authors conclude that the reported approach extends previous research by using a priori theoretical justification for prediction, it eliminated the problem of classifying predictor scales by using only one instrument, and it provided support for the notion of matching predictors and criterion as a means of maximizing validity estimates. Given the positive findings in this study, it is possible to extend this research effort to the specific question of leadership effectiveness as well as the impact of including dark side personality traits to the predictor side of the equation.

A primary interest of the current research effort is the idea that using a broader, more encompassing, personality-based, approach will lead to a better understanding of leadership, generally, and the impacts to leadership effectiveness (or ineffectiveness as the case may be), specifically. To this end, the argument for implementing the HDS (and expecting positive results) is as follows. First, socioanalytic theory proposes the underlying human motives as a need for acceptance (getting along) and status (getting ahead) and argues that these needs will, at times, cross purposes. Next, similar to Hogan and Holland (2003), but based on the managerial and leadership effectiveness taxonomies, it is possible to align the predictors (bright and dark side personality) and criteria (task- and relationship-oriented or getting ahead and getting along). Therefore, by including the HDS, a measure of dysfunctional interpersonal tendencies, and matching this with the relationship-oriented factor in the leadership effectiveness model, it is likely incremental variance in the outcome measure will be accounted for above and beyond normal personality measures. Furthermore, I would not expect the incremental gains to be as large with the task-oriented, technical functions of management and leadership. Returning to the ubiquitous task and relationship factors in the study of leadership, the largest incremental gain will likely occur in the relationship-based measures of leadership effectiveness. Finally, given the primary placement of the interpersonal and leadership dimensions in the Domain Model, understanding and predicting these relationships could go a long way to advancing the body of knowledge directly affecting leadership selection, placement, promotion, and development.

Broad Research Areas for Investigation

In summary, this comprehensive review of the literature focuses squarely on the issue of developing a more robust understanding and explanation of leadership effectiveness by adding measures of the dark side of personality to normal, FFM-based traits. This examination necessarily requires us to look at potential extensions of the existing research base to consider a broader spectrum of dispositional influences that affect relevant leadership outcome variables, in particular, leadership effectiveness. From a theoretical perspective, this research is warranted due to the paucity of empirical research that has addressed the dispositional basis for leadership and managerial derailment. Our existing knowledge and research base is focused almost exclusively on the bright side of personality. Although the re-emergence of the trait perspective in leadership research, combined with paradigmatic advances, has gone a long way to support the dispositional basis to leadership, the results are still modest and a great deal of variance is left unexplained. Given the long history of relationship-oriented and task-oriented factors and the general emergence of these same broad factors from most of the domain models addressing managerial effectiveness, it seems quite plausible that measures specifically aimed at identifying interpersonally dysfunctional dispositions would, in fact, improve the ability to provide better predictions of leadership effectiveness. More importantly, it offers the real possibility of identifying those who would be (or are) ineffective and potentially harmful to the overall success of the organization (think Enron, Sunbeam, Tyco, etc.).

On a more practical, or applied basis, this research provides the opportunity to help organizations make better use of their capital resources. The assessment, selection,

and broad training programs have virtually become a cottage industry onto themselves; therefore, additional empirical information to help guide organizations with the selection of the types of instruments to use, the associated validity, and expected potential gains from using them is a good thing. If we grant the assumption that organizations will continue to assess individuals across a wide range of variables, then, all else equal, it seems far better to invest wisely and use instruments that are empirically developed, useful, legal (fair and unbiased), and valid. This research will help to move in this direction.

The broad overview of the relevant literature included here provides a foundation for a number of important research propositions that would advance the study of personality, leadership, and leadership effectiveness. This foundation is used to derive the broad propositions listed below. It should be noted, at the outset, that the intent of this thesis is not to address all of these questions; rather a smaller subset of these propositions as outlined in Chapter 2.

Broad Research Area #1: Construct validity. More specifically, to what degree can the nomological network surrounding the HDS (and other dark side instruments) be expanded? For instance, evaluating the convergent and divergent validity with normal personality measures, other dark side measures, and measures of personality disorders would likely provide significant evidence to address the question: what do dark side traits really measure? To some degree, this area would address the notion that the HDS occupies a “middle space” in the measurement of the spectrum of personality and is it possible to replicate the underlying 3-factor structure of the instrument.

Broad Research Area #2: Criterion-related validity. In this area, it is possible to think about three specific areas for advancement. First, can the prediction of job performance be informed and improved by the use of these dark side traits? Second, can the more specific problem of predicting managerial and leadership effectiveness be informed and improved by these dark side traits? And, third, is it possible to theoretically derive a predictor-criterion matching strategy (Campbell, 1990), using the dark side traits, to maximize validity and thus improve prediction.

Broad Research Area #3: The domain of leadership effectiveness. Building on the existing competency models, is it possible to leverage the generality of the Hogan and Warrenfeltz (2003) Domain Model and classify outcome measures more precisely to better account for the existing variability in the outcomes? Indeed, this question also speaks to the notion of matching predictors and criterion to maximize validity.

Broad Research Area #4: The relationship between dark side traits and leadership effectiveness (i.e., linear versus curvilinear). The crux of the argument regarding the nature of the relationship between dark side traits and effectiveness revolves around the question of how much is too much? Fecteau et al. (2005) reported positive correlations (and beta weights) between the moving against scales (including narcissism) and outcome measures. Additionally, Maccoby (2000, 2003) argues that common traits of narcissistic leaders, for instance, believing they can change the world, are a primary reason many of them are so effective. However, the very traits that drive their effectiveness and success are the ones that often times lead to their eventual failure. Furthermore, the moving against scales of the HDS conceptually align with the notion of getting ahead or achieving results. It is possible that an overemphasis on getting ahead

(achieving results) comes with a significant downside risk and might be explained by a curvilinear relationship between the variables. A better understanding of these specific relationships between HDS scales and leadership outcome measures is critical to being able to fully leverage the value of including dark side measures and it will potentially illuminate the point at which a decrement in performance can be expected from an over reliance on “getting ahead.”

Broad Research Area #5: Normal personality traits as moderators. A good deal of literature from the study of normal and abnormal personality structure supports the idea that some of the normal, FFM traits, in particular neuroticism, agreeableness and extraversion hold a more primary linkage with abnormal personality (Digman, 1997; Markon et al., 2005) and they are also generally more strongly related to actual personality disorders. Therefore, we can expect that these “stronger” traits might moderate the emergence of dark side traits. For instance, low scores on neuroticism could moderate the impact of dark side traits on leadership effectiveness. Specifically, those who have lower scores on neuroticism (higher scores on HPI adjustment) can “tolerate” or “cope” with elevated scores on derailing/dark side traits and still function at an interpersonally sound, functional, and high level. That is to say that, lower levels of neuroticism correspond to leaders being more resilient and better able to maintain a higher level of leadership performance across a variety of situations.

Both modern and ancient history is littered with examples of leadership—some good, some bad—and the continued study of leadership is evolving and important. In fact, the very course of human events will, no doubt, continue to be guided and influenced by leadership. Historically, both the study of leadership and personality

shifted from a focus on “Great Man” and trait theories to an approach that highlighted the behavioral and situational imperatives. However, the emergence of a broad-based, five factor model of normal personality as well as neocharismatic and transformational theories of leadership has fueled a research paradigm that continues to grow and further establish the base for a strong dispositional link to leadership across a wide-range of individual difference variables. As leadership research paradigms continue to expand and change, two parallel lines of inquiry are emerging. On the one hand, theories rooted in positive psychology and the associated concept of authenticity are beginning to investigate how the positive human strengths of optimism, hope, and resiliency can be leveraged to enhance leader development. On the other hand, the approach outlined in this paper is rooted in the managerial derailment literature and argues for leveraging the incremental value offered by derailing/dark side personality traits as a means to identify and predict ineffective, even destructive, leadership. In concert, these two lines of research provide leadership researchers—as well as those interested in the progress, development, and course of human events—a broad-based approach capable of providing theoretically and practically important information to theoreticians and managers alike. The very survival of humanity hangs in the balance!

Chapter Two

Summary, Research Objective, and Research Questions

The current chapter addresses three separate yet closely related issues. First, the chapter briefly summarizes the extensive literature review, narrowing the focus to the most important aspects of the present study and establishing the framework for the second two issues. Next, the chapter describes the overall research objective that constitutes the basis for the third and final issue of the chapter, the specific research questions to be tested in the current study.

Summary

As the previous chapter demonstrates, leadership has been a topic of significant interest and import for more than a century. The specific focus of leadership research has shifted over time and has, in a sense, come full circle from its early beginnings (the Great Man Theory) when it focused on specific traits that were linked to both leadership emergence and effectiveness to the current time where the development of an organizing personality taxonomy, namely the FFM, provides a sound foundation for investigating the dispositional basis to leadership emergence, effectiveness, and, more broadly, leadership performance. This advancement on the personality-side of the research equation has also been paralleled by an advancement in the understanding of what is meant by managerial/leader performance. As summarized in Table 6, all four of the taxonomies of managerial performance listed in the table arrive at very similar positions. Although the exact terminology and number of categories vary to some degree, the general trend indicates that leadership performance is primarily composed of activities that are focused on the task (i.e., structure) or interpersonal/relationship-based activities.

Furthermore, these higher-order domains are aligned with the position forwarded by Hogan and colleagues that humans, in general, are motivated by the desire for status (getting ahead which is linked to task-related activities) and acceptance (getting along, which is related to relationship-related tasks). In this sense, the criterion-side of the leadership endeavor, for the purposes of this study, has come full circle to the initial leadership studies that focused on structure and relationship as key aspects to leadership.

Even though the study of leadership has developed quite nicely and made a number of lasting and important contributions to the scientific endeavor, it is not enough to simply rest on its laurels and pretend that the study has answered all of the pertinent questions. The fast-paced, ever-changing, global economy levies leadership researchers with a definite mandate to do even more to understand the dynamics of the leadership enterprise. Of particular interest, is the ability to better understand the relationships between individual dispositions and leadership outcomes. In fact, this enhanced understanding would be useful to practitioners and researchers alike in the areas of selection, promotion, development, and training. This study argues as its major premise that the research to date has largely ignored a very important piece of the puzzle—the search for understanding should not, and cannot, be limited to those traits that we expect to lead to success and have positive relationships with leadership success. It is imperative that researchers also include failed leadership and leadership ineffectiveness as important areas for study. Certainly, knowing what traits are most related to success is definitely a good start, but if these leaders also have traits that are likely to lead to derailment, poor performance, or lowered organizational performance, we must understand those as well. Initial work in this area by Bentz and the Center for Creative

Leadership provided a promising start; however, after this promising start, little research has continued to build on or expand these early findings.

Although there is a paucity of research that specifically addresses the question of predicting leadership ineffectiveness or derailment, there has been much work on developing dispositional measures that can assess traits that are likely to be sources of significant interpersonal dysfunctions (termed the dark side of personality which stands in stark contrast to the bright side of personality represented by the FFM) which if left unchecked will undoubtedly become a fertile ground for leaders to lose the trust and respect of followers and consequently impair their ability to achieve the ends of leadership, specifically supporting long-term organizational goal attainment and success.

The opening chapter closes with a list of broad research questions that are certainly worthy of further investigation. All of these questions have both theoretical and practical implications that are likely to extend and improve our understanding of leadership, in general. To wit, it would be quite useful to know whether or not we can gain predictive value by including measures of these derailing/dark side traits or if these measures are nothing more than fine-grained, differently-named, variations of the common FFM traits that we already include in the study of leadership behaviors and outcomes. The simple fact that this is a question that has not been pursued in the literature in no way denies that it can be done or that it should be done. Undoubtedly, doing so would elucidate the domain of leadership in such a way as to improve the ability to predict, select, promote, and train the best leaders with the greatest likelihood of personal success, thereby creating the highest probability of sustained, long-term success for the organization.

Research Objective

Based on the preceding summary and my personal reflection on the topic at hand, it is clear that investigating the role of derailing/dark side traits in the study of leadership is an absolute necessity. Furthermore, it seems logical to ask whether the general focus on predicting leadership effectiveness and success has lead researchers to overlook an area that can conceivably augment our predictive abilities a great deal. Based on the general disregard for these traits, until now, it remains to be seen if and to what degree the addition of these dispositional traits, that are linked to interpersonal dysfunctions, can provide useful information as well as advancing both theory and research in this area.

The explicit, overarching objective of this study is to develop a more robust understanding of the possible predictors in the leadership domain, with a specific emphasis on derailing/dark side traits, and how these predictors can be included to better understand the predictor criterion linkage. Very specifically, this study looks at the relationships between the FFM traits and the derailing/dark side traits with respect to leadership performance. This overall objective provides the basis for the following four research questions: 1) What are these derailing/dark side measures?, 2) Do these derailing/dark side measures increment the predictive ability of the FFM?, 3) Does emotional stability operate as a moderator between derailing/dark side traits and leadership performance?, and 4) Is the relationship between leadership performance and derailing/dark side traits curvilinear? Each research question stated above is further developed below to include specific statements of hypotheses.

Research Questions/Hypotheses

Research Question One: What Are These Derailing/Dark Side Measures?. A full and complete construct validation is beyond the scope of the current research enterprise; however, the current data allow an initial look at several relationships that can aid in our continued (and developing) understanding of what these traits are. In general, this question will be investigated through graphical analyses, bivariate relationships, and review of zero-order correlations. Given that this study was not designed as a construct validation study, the convergent and divergent information that can be assessed is quite limited. However, all samples include FFM measures as well as the derailing/dark side measures; therefore, the following hypotheses are derived:

Hypothesis 1a: Five Factor Model traits will be distinct from derailing/dark side traits.

Hypothesis 1b: Derailing/dark side traits will have distributional properties that distinguish them from FFM traits.

Hypothesis 1c: The theoretical 3-theme structure of the dark side personality measure is supported empirically.

Research Question Two: Do These Derailing/Dark Side Measures Increment the Predictive Ability of the FFM?. Past leadership research has invested a significant amount of effort in understanding the predictive utility of the FFM to leadership outcomes, both at the trait level and as a set. Armed with this information about the FFM traits and the associated predictive ability, it is possible to assess any incremental value of adding the derailing/dark side traits to the equation. In addition to assessing the overall incremental value, I will also evaluate the nature of this incremental value, with the

expectation that the regression weights for these derailing/dark side traits will be negative. Across the three samples, three separate hierarchical regression models will be employed to evaluate this question. Model 1 simply includes the FFM traits, model 2 includes the derailing/dark side traits only, and model 3 adds the derailing/dark side traits to the FFM traits in a separate step to test the incremental gain in variance accounted for by the addition.

Hypothesis 2a: Derailing/dark side traits will account for significant variance above and beyond that accounted for by the FFM traits.

At the heart of the derailing/dark side traits measures is the theoretical idea that these traits represent interpersonal dysfunctions that will likely become more prominent during times of crises, under heavy workload, or under severe time pressure. Given that, one would expect that these derailing/dark side traits would be more important (and useful) when predicting the more relationship-oriented aspects of leadership performance. This fact gives rise to the following hypothesis:

Hypothesis 2b: Derailing/dark side traits will account for larger increments in variance accounted for when the leadership outcome measure focuses on the relationship/interpersonal aspects of leadership performance.

Research Question Three: Does Emotional Stability (Adjustment) Operate as a Moderator Between Derailing/Dark Side Traits and Leadership Performance?. The final two research questions (three and four) should be classified as exploratory in nature. However, exploratory should not be taken to mean without theoretical support or direction. Instead, the term exploratory is more in reference to the fact that there is very little empirical research that exists to guide the formation of these more advanced (and

tentative) questions. On a more positive note, the investigation of these questions will also speak to issues raised in research question one by furthering the discovery of just how these derailing/dark side interact with other relevant variables in a larger system. In particular, the current question borrows from the psychopathology literature, and builds on the findings in that area that neuroticism (negative pole of emotional stability/adjustment) assumes a more primary role within the FFM traits with respect to the emergence of psychopathology. That is to say that higher levels of neuroticism can be classified as a risk and/or contributing factor to the development of psychological disorders (many of which include interpersonal dysfunctionalities as one of the primary symptoms). Given this logic and the literature from psychopathology areas, it is likely that emotional stability might also take a primary role with respect to the emergence (or risk of emergence) of interpersonal dysfunctions associated with the derailing/dark side traits. In the present research, this primary role is conceptualized as an interaction between emotional stability/adjustment and the derailing/dark side traits. In effect, emotional stability (or adjustment) might moderate the relationship between the derailing/dark side traits and leadership performance. This moderating effect would best be characterized by a stronger relationship for those who are lower (-1 SD) on measures of emotional stability/adjustment than for those who are higher (+1 SD) on those same measures. Specifically, and in statistical terminology, the -1 SD group should have a steeper, negative slope when regressing leadership performance on derailing/dark side traits than those who are higher in the +1 SD group. Furthermore, as was the case in research question two, it is likely that this moderating effect would be stronger in those leadership performance measures that are more closely aligned with the interpersonal

domain. With respect to the selection and promotion areas of industrial-organizational psychology, the interactive effect of these traits can have important ramifications. For example, elevated scores on derailing/dark side traits could possibly be mitigated by higher levels of emotional stability/adjustment to the extent that more stable individuals are better able to manage these traits and avoid the expected interpersonal dysfunctions that would likely lead to decrements in leadership performance. Stated in a slightly different manner, lower levels of emotional stability/adjustment could be conceptualized as a “triggering condition” for the emergence of the negative aspects of the derailing/dark side traits. This interaction hypothesis will be tested using hierarchical regression models. Included at step one are the two individual trait variables and the product term between emotional stability/adjustment and the derailing/dark side trait is added at step two leading to the following hypothesis:

Hypothesis 3: Emotional stability/adjustment will moderate the relationship between derailing/dark side traits and leadership performance such that individuals who score higher on emotional stability/adjustment will exhibit more resistance to the negative effects of the derailing/dark side traits. Furthermore, this relationship will be stronger in those leadership performance measures that focus on the interpersonal aspects of the leadership domain.

Research Question Four: Is the Relationship Between Leadership Performance Measures and Derailing/Dark Side Traits Curvilinear?. Similar to research question three, the possibility of a derailing/dark side-leadership performance relation that is curvilinear has not been directly examined (empirically) in the literature to date. At the heart of the argument is the proposition that the trend (in a bivariate sense) is not linear,

but rather curvilinear and best represented by an inverted U-shaped function. For instance, the absence of any level of risk-taking, grandiose thinking, entitlement, feelings of superiority, and other associated traits is not likely to even provide an individual with the opportunity to assume a leadership role (or emerge as a leader, irrespective of any concern for effectiveness); however, excessive levels of these traits would be likely to eventually work to the detriment of the specific leader's ability to accomplish goals through other people—hence the likelihood of a inverted U-shaped relationship. In fact, the point between these two extremes where the slope of the curve is zero represents the optimal level of derailing/dark side trait. Again, hierarchical regression will be employed to analyze the possibility of this inverted U-shaped relationship by adding the derailing/dark side trait in step one and the squared term in step two. A significant increment to R^2 would indicate the presence of a curvilinear trend.

Hypothesis 4: There will be an inverted U-shaped relation between the derailing/dark side traits and leadership performance.

An Alternative Model

Chapter One first introduced the proposition that personality can best be conceptualized as existing on one continuum with normal personality occupying the majority of the distribution, abnormal personality on the extreme tail of the distribution, and the derailing/dark side traits occupying the “middle space” between these other two pieces of the continuum. With this proposition in mind, there are some important issues that are worthy of serious consideration. For instance, how closely related are these derailing/dark side scales and can they be better represented by a smaller number of measures or scores? Can the five derailing scales of the GPI best be represented by a

single derailing composite? And, similar to Hypothesis 1c, can the 11 dark side scales be better represented by the three higher-order themes initially proposed by Horney (1950) that also served as the rational underpinning to the HDS? The crux of this argument focuses on the idea that having an elevated score on one or two scales may not constitute a “critical mass” for seeing the hypothesized decrements in performance. Theoretically (and practically) almost every individual is going to have some elevated scales; however, this, in and of itself, should not (and likely will not) be a disqualifying set of circumstances. But, should someone have a number of elevated scales, we might conceive of this as reaching a “tipping point” and expect to see a career and performance replete with problems, especially at the interpersonal level.

For this reason, it seems worthwhile to consider the value-added to the current research effort to investigate the possibility that constructing a higher-order scale (or set of scales) as a means to evaluate a larger distribution in the sample (i.e., the range of scores across 4-5 scales is obviously wider than for each individual scale) would allow the researcher to test an additive model with respect to the investigation of the role of derailing/dark side traits. Of course, we would need to show empirical evidence for the aggregation to a higher level prior to performing this scale construction exercise. At the individual scale level, it is possible that the relationship is not strong enough to uncover the exact negative relationships because the scale distribution is just too narrow. However, aggregating across a larger number of scales offers the chance to produce a distribution that on the low end represents individuals with low scores on all of the scales and on the higher end individuals who have scored high on all scales and all manner of combinations occupying the center of this distribution. From a theoretical point of view,

this type of aggregation is best represented by an additive model, and this model springs from the notion that in order to find the proposed decrements in performance a single scale is not enough, but rather an individual would need to have a pattern of behavior that might best be referred to as a derailing/dark side syndrome.

Since the literature to date has not directly examined this additive model concept, it is best to classify the test associated with this model as exploratory; however, it is likely that the magnitude, direction, and general form of the regression results using these higher-order scales should be similar to what is expected at the individual scale level analysis. Furthermore, significant and consistent support at the individual scale level of analysis would certainly be an indication that this scale does have a primary role in the prediction of leadership performance. However, lack of support at the scale level does not equivocally answer the question; instead, it opens the door to test the additive model as a means to better understand the relationships between normal personality traits, derailing/dark side traits, and leadership performance. In fact, support for this additive model hypothesis potentially provides a wealth of information to practitioners and theoreticians alike.

Chapter Three: Methods

Three separate (mutually exclusive and independent) samples comprised the total sample pool for the current study. Since the individual samples differ across a number of key variables and measures, each sample is described and outlined separately in the remainder of this chapter.

Sample 1: Multi-organization Assessment Center Sample

Participants and Procedures

A total of 1,330 mid-level managers participating in an assessment center at an international consulting and research firm formed the basis of this sample. The average age of individuals in the sample was 41.5 years ($SD = 7.12$; $Mdn = 41.0$ years); 77% of the participants were male and 91% were Caucasian; 85.6% possess a bachelor's degree or higher; the average managerial tenure was 13.2 years ($SD = 7.42$; $Mdn = 13.0$ years) and categorically 81.2% reported having greater than 6 years of managerial experience; industries represented include: wholesale/retail trade (19%), manufacturing (14%), services (12%), health care (9%), and several other industries with percentages less than 4%; the vast majority currently work in the United States (greater than 95%; complete demographic information is presented in Table 7).

Inclusion in the dataset was restricted to those individuals participating in the assessment center with the explicit goal of determining who would be “selected” into the hiring organization. Indeed, this assessment center setting is a “high stakes” scenario and is quite different from individuals participating in a development process with the express purpose of providing feedback in an attempt to spur, sharpen, or guide development of a

job incumbent. All of the data included here were collected over a 6.5 year period between 1999 and 2005.

The data collection process included both self-report measures of personality traits and participation in a structured assessment center. All participants completed the self-report measures prior to participating in the selected assessment center exercises. The assessment center included a standard list of exercises including: 1) an in-basket exercise, 2) a structured interview, 3) a direct report meeting, 4) a process improvement team exercise, and 5) a strategic presentation. Table 8 lists and defines the 16 competencies that could have been evaluated across all of the exercises⁵. The competencies were evaluated by trained assessors at the consulting firm using consistent, behaviorally anchored rating scales.

The final dataset (for analysis purposes) contained 1,306 participants who had complete data on both the self-report personality measures and assessment center behavioral ratings.

Measures

Personality Measures. The Global Personality Inventory© (GPI) is a cross-cultural measure of personality designed to be used in a work context for activities including selection, development, coaching, feedback, and succession planning (Dohm, 1999; ePredix, 2001; Schmit et al., 2000). The GPI was developed with an equal emphasis on employing sound personality theory (e.g., McCrae & Costa, 1997; Paunonen, 1998) and job performance theory (e.g., Campbell et al., 1993; Campbell et

⁵ Hiring organizations selected the specific activities and competencies to be assessed; therefore, not all participants have data for all 16 competencies (a total of 4 competencies have sample sizes less than 1,330; 2 competencies (Think Strategically and Champion Change) N = 582 and 2 others (Foster Teamwork and Focus on Customer Needs) N = 795).

al., 1996). The GPI consists of 300 items and 37 scales. The items are rated on a 5-point likert scale ranging from “Strongly Disagree” (1) to “Strongly Agree” (5). Similar to other measures, the traditional Five Factor Model (FFM; agreeableness, conscientiousness, emotional stability, extroversion, and openness to experience) traits are assessed by this measure. Table 9 provides a list of the FFM-traits, their associated facet-level traits, and a sample item for each trait. According to the manual, internal consistency estimates for the facet scales range from .48 to .88 with an average estimate of .71 and the average test-retest reliability, across a 2 week interval, was .78 (ePredix, 2001). Table 10 presents the means, standard deviations, and reliability estimates for the current sample. It is important to note that the reliability estimates are internal consistency estimates (coefficient alpha) and therefore represent a conservative, lower-bound estimate of the actual reliabilities compared to the reliability of a weighted composite (Mosier, 1943) which would have been a better estimate had the data been available. Furthermore, the data presented in Tables 11 – 12 and Figure 2, demonstrate that the distributions are not meaningfully skewed or kurtotic and comparisons with the mid-level managerial norm sample yield an average SD ratio and d-value of 0.92 and .25, respectively for the five personality factors, decreasing concerns regarding range restriction in this sample.

Additionally, the GPI measures five personality traits under the performance factor heading of “derailing leadership.” These traits focus on “quasi-leadership tactics” that might prove useful in the short-term, but ultimately will cause leaders to lose the support of those around them in the long-term. In general, these facets are conceptualized as dysfunctional work behaviors and are thought to lead to failure or

derailment. These five traits are ego-centered, intimidating, manipulation, micro-managing, and passive-aggressive. These items are rated on a 5-point likert scale ranging from “Strongly Disagree” (1) to “Strongly Agree” (5) and Table 13 lists a sample item from each of the scales (and scale definitions are in Table 4b). Again, Table 10 presents the means, standard deviations, and reliability estimates for the current sample (because each of these facets is a single scale, the alpha estimates presented in these tables are from the GPI technical manual and range from .56 to .79). As with the five factor traits, Tables 11 – 12 and Figure 3 provide support for these derailing leadership traits being normally distributed and in line with the published mid-manager norm sample (average SD ratio = .90 and average d-value = .14).

Criterion Measures. As discussed in the participants and procedures section, individuals in this sample participated in an assessment center. The ratings made by the trained assessors from the consulting and research firm during the assessment center are the basis for the criterion measures used in this sample. The consulting and research firm rationally developed a set of 7 higher-order factors based on the 16 competencies assessed during the exercises (see Table 14). However, based on previous literature (as reviewed in Chapter 1), it seemed likely that a much smaller (and more parsimonious) set of factors might better describe the 16 competencies. Table 15 and Figure 4 provide the results of the exploratory factor analysis and, in fact, support the idea that a smaller number of factors could be derived to represent these behavioral ratings from the assessment center. Even though visual inspection of the scree plot (Figure 4) supports extracting 4 factors, a careful review of the eigenvalues and patterns of factor loadings determined a 3-factor solution accounting for 55.4% of the total variance was the most

interpretable solution (Kim & Mueller, 1978a, 1978b). Consistent with much of the leadership literature, the current 3-factor solution contains both a task factor (structure) and an interpersonal factor (relationship). In line with Hogan and colleagues, these factors can be conceptualized as a need for status or “getting ahead” leadership (9 competencies) and a need for acceptance or “getting along” leadership (6 competencies⁶). The third factor is best represented as a “thinking factor” (2 competencies) with specific decision making attributes and is quite distinct from the leadership factors extracted. Additionally, an overall assessment center leadership score was calculated as a unit-weighted average of all 14 leadership competencies.

Tables 10 – 11 report the means, standard deviations, reliabilities, skew, and kurtosis for both the rationally and empirically derived assessment center factors (distributions are presented in Figures 5 – 6). The empirically derived factors are normally distributed and reliability estimates range from .81 for the “getting along” leadership factor to .86 for the overall assessment center factor.

Sample 2: Single Organization Corporate Sample

Participants and Procedures

A total of 326 management-level employees from a US-based, multinational transportation company form the basis of this sample. This Fortune 500 company is best described by the Standard Industrial Classification (SIC) category (Two Digit 41 – 49) labeled “Transportation, Communication, and Utilities”. The majority of respondents were male (88%), Caucasian (84%), working in a domestic location (85%), and

⁶ One competency, “Influence Others,” loaded .51 on both the “getting ahead” and “getting along” factor. After a review of the behaviorally anchored rating scales for this competency, I decided to allow the competency to cross-load on both because the ratings focused, equally, on the influence attempt as well as the outcome of the attempt.

possessed at least “some college” (89%). Table 16 reports the complete demographic analysis for those variables that were available to the researcher.

Participants in this data collection effort were part of a larger succession planning and organizational development project in the host organization. Data collection progressed in two stages. In the first stage, respondents completed self-report personality measures (described below). The second stage of data collection involved collecting leadership performance ratings using an internally developed multi-rater tool (described below). Each subject received ratings from two separate sources: 1) supervisor and 2) other. The supervisor was the focal participant’s immediate supervisor while the other category consisted of both peers and subordinates. Focal participants were allowed to select the raters to be included in the other group, but were instructed to select individuals who were in a position to have observed them in a leadership role over a period of no less than 6 months. Additionally, participants were encouraged to select both peers and subordinates. Of the 326 participants to complete the self-report measures, leadership performance data were available for 295 and matched personality-leadership performance data were available for 290; therefore, the final sample size for the regression analyses reported later is 290.

Measures

Personality Measures. Two sets of personality measures were administered to participants, the Hogan Personality Inventory© (HPI; R. Hogan & J. Hogan, 1992) and the Hogan Development Survey© (HDS, R. Hogan & J. Hogan, 1997). The HPI is a 206-item measure of normal personality (no time limits for completion imposed) that was explicitly designed for use in selection, assessment, and career-related decisions and, like

the GPI, was designed with the FFM of personality as its basis. Respondents endorse all items as either “agree” or “disagree” that the presented statement describes them. The seven primary scales of the HPI, their associated definitions, and a sample item from each scale can be found in Tables 17 and 18 (the HPI also has one validity scale embedded and there is no item overlap between dimensions). Furthermore, Figure 1 (adapted from J. Hogan & Holland, 2003) provides good convergent evidence for the HPI’s seven dimensions with the FFM dimensions with median correlations ranging from .30 between Openness to Experience and Learning Approach to .73 between Neuroticism and Adjustment.

With respect to psychometric properties, Table 19 presents the means, standard deviations, and reliability information for the current sample (see also Axford, 1998; Lobello, 1998). Historical reliability information from the test manual shows internal consistency estimates range from .71 for interpersonal sensitivity to .89 for adjustment (average across dimensions is .80) and test-retest reliability over an interval of 4 weeks or more range from .74 for prudence to .86 for adjustment and learning approach (average across dimensions is .71) (R. Hogan & J. Hogan, 1997). In the current sample, internal consistency (alpha) estimates ranged from .67 for prudence to .83 for adjustment with an average value of .73 across all seven scales. Additionally, Tables 20 and 21 indicate generally normal distributions (with the exception of ambition and interpersonal sensitivity) and consistency with published norms (with the exception of ambition where the SD ratio is .36) and Figure 7 presents the distributions.

The other self-report personality measure used with this sample was the HDS. The HDS is a 168-item measure (with no time limits for completion imposed) designed to

assess 11 common dysfunctional dispositions. These dispositions tend to focus on a person's interpersonal short-comings and likely have a negative influence on one's life and career success and happiness. It is further thought that these traits are more likely to emerge under times of crisis, stress, or during periods of heavy workload and generally lead to lowered performance, poor interpersonal relationships, and decreased productivity and career success. Tables 4a and 22 contain the scale names, descriptions, associated interpersonal deficiency, and sample items (see also Tables 3 and 5). Respondents are asked to "agree" or "disagree" with the statements listed in the inventory and there is no item overlap between dimensions. The HDS has been cross-validated with the MMPI and shows convergence with several other test and non-test measures (R. Hogan & J. Hogan, 1997; R. Hogan & J. Hogan, 2001).

With respect to additional psychometric properties, the HDS test manual reports internal consistency estimates ranging from .50 (dutiful) to .78 (skeptical) with an average value of .67 (see also Fox, 2001; Huebner, 2001). Test-retest reliabilities over a 3-month interval ranged from .58 (leisurely) to .87 (excitable) with an average value of .75. In the current sample, internal consistency estimates ranged from .39 for dutiful to .66 for bold with an average value of .54 across all 11 scales. Clearly, the internal consistency estimates are lower than the accepted lower bound of .70; however, several issues should be noted. First, the two option response format (as opposed to a 5- or 7-point likert scale response format) affects the observed variation in scores which directly influences the psychometric properties. For instance, both Comrey and Montag (1982) and Muniz, Garcia-Cueto, and Lozano (2005) report results supporting the use of 5- or 7-point scales for two separate personality inventories (cf. Bendig, 1954; Matell &

Jacoby, 1971; Matell & Jacoby, 1972). These findings linked higher and more stable internal consistency estimates as well as more stable factor structure to the use of more scale points (up to 7). Next, the estimates in the test manual are based on a sample size that is nearly 10 times as large as the current sample and thus more representative of the true values. Finally, and most importantly, the test-retest reliabilities range from .59 to .87 with an average of .75 and only 3 of the 11 scales are below the standard lower bound of .70 (see Table 19). Tables 19 – 21 and Figure 8 present the means, standard deviations, reliabilities, skewness, kurtosis, SD ratios, and dark side trait distributions for the current sample. By and large the measures are both normally distributed and not confronted with a range restriction issue.

Criterion Measures. Leadership performance was assessed using a 21-item multi-rater feedback tool that was designed by a Subject Matter Expert (SME) panel for internal use with this organization. The SME panel consisted of 6 industrial and organizational psychologists (2 PhDs and 4 Masters), 1 MBA, and 22 managers. The instrument measured four specific types of leadership performance: business, people, results, and self and raters were asked to use a 5-point likert scale ranging from “strongly disagree” (1) to “strongly agree” (5) to respond to all 21 items on the instrument. Table 23 provides definitions of each leadership performance dimension. The leadership dimensions used in this sample are an aggregate of two separate groups of ratings as outlined in the participants and procedures section above. The first group consisted of the participants’ immediate supervisors and the second group was a collection of peers and other individuals who had observed the participants’ behavior. The leadership performance ratings for these two groups were aggregated to arrive at one set of

leadership ratings. Additionally, the researcher created an overall leadership performance variable by averaging the four specified leadership performance dimensions (a principal components analysis indicated a single factor solution that accounted for 84.2% of the variance with factor loadings ranging from .89 for self leadership to .93 for business leadership, see Table 24); therefore, there are 5 leadership criterion measures for this sample. Tables 19 and 20 and Figure 9 present the means, standard deviations, reliabilities, skewness, kurtosis, and distribution information for all five leadership dimensions in the current sample. Although there is some evidence of negative skew and positive kurtosis in the distribution of outcomes, it does not reach a level that should be worrisome (Tabachnick & Fidell, 2001). However, even though ordinary least squares (OLS) regression is robust to violations of some assumptions, a careful review of Figure 9 clearly indicates that the lower (i.e., “poor performing”) ends of the scales simply were not used by raters and for all practical purposes, the rating scale was really compressed to approximately 80% of its original range.

Sample 3: Single Organization Corporate Sample

Participants and Procedures

A total of 296 management-level employees from a US-based, multinational manufacturing company form the basis of this sample. This Fortune 500 company can be further described as residing in the SIC category labeled “Manufacturing” and the two-digit SIC code 41, Food and Kindred Products. The majority of respondents were male (57%), Caucasian (67%), and working in a domestic location. Table 16 reports the complete demographic analysis for those variables that were available to the researcher.

Participants in this data collection effort were part of a larger organizational development and talent management project in the host organization. For this particular portion of the project, data collection progressed in two stages. In the first stage, respondents completed self-report personality measures (the HPI and HDS) and in the second stage of data collection, participants' immediate supervisors provided leadership ratings across two dimensions: business results leadership and people results leadership. The host organization assesses managers annually as part of an internal, ongoing talent management and succession planning process. The ratings included here were accomplished by supervisors during this annual performance evaluation and assessment phase. Of the 296 participants, 263 completed both personality measures and leadership performance data was available for 252. However, complete, matched personality and performance data were only available for 220 managers; therefore, the final sample size for the regression analyses reported later is 220.

Measures

Personality Measures. The HPI and HDS were the self-report personality measures used in this sample. Instead of replicating the majority of the information in the Sample 2 subsection, only information unique to Sample 3 (mean, standard deviation, reliability, etc.) is presented in this section. Table 25 presents the means, standard deviations, and reliabilities. With respect to the HPI, internal consistency estimates ranged from .71 for prudence to .89 for adjustment with an average value of .80 across all seven scales. For the HDS, internal consistency estimates ranged from .50 for dutiful to .78 for excitable with an average value of .66 across all eleven scales. Although these estimates are closer to conventionally accepted levels than in sample 2, there are 7 of the

11 scales below .70. The reader is referred back to the discussion in the sample 2 measures section regarding this issue for further information or as required. Tables 26 – 27 and Figures 10 – 11 provide distributional information for all of the HPI and HDS dimensions included in this sample. Similar to Sample 2, there is some evidence of high levels of negative skew in a few of the dimensions. In particular, adjustment, ambition, and interpersonal sensitivity have high levels of skew compared to their standard errors. Additionally, ambition and interpersonal sensitivity suffer from high levels of positive kurtosis. Although these values are larger than we would like to see, they are not so extreme as to cause concern with violations of the assumption of normality, especially given that most regression tests are robust to violations of this assumption with larger sample sizes (Tabachnick & Fidell, 2001). With respect to range restriction, the results in Table 27 shows the average SD ratio with the published general population normative sample is .88 and .94 for the HPI and HDS, respectively and the average d-value is .23 and .12, respectively. With the exception of ambition, there is little reason to be concerned with problems from range restriction in this sample.

Criterion Measures. Two measures of leadership performance were collected for this sample. Leadership performance was assessed using two separate single item measures. Each measure asked the supervisor to reflect on the last 12 months and make an overall, global rating with respect to the leader's "business results leadership" and "people results leadership." Both items were rated using a 5-point likert type scale with "1" being the lowest performance (i.e., "poor, well below average") and "5" being the best/highest performance (i.e., "excellent"). Additionally, the researcher computed an overall leadership/results score by averaging the two single-item measures; however, due

to the low zero-order correlation between the two leadership ratings, the low internal consistency estimate, and the poor principal components analysis results, the overall factor was not included as a leadership criterion measure in the regression analyses. Therefore, this sample has two criterion measures of interest. Since the measures are single item, no internal consistency estimate is possible. Finally, Tables 25 – 26 and Figure 12 present the means, standard deviations, reliabilities, skewness, kurtosis, and distribution information for the three leadership performance measures in the current sample. Although the outcomes measures appear normally distributed (i.e., not markedly skewed or kurtotic), there is significant evidence of scale compression; that is to say, ratings of 1 were nearly nonexistent (only 2 “1” ratings out of a possible 504). Although the frequency of “2” ratings were nearly identical to ratings of “5” ratings, the vast majority of ratings were “3” and “4” (82% and 89% of all ratings for business results leadership and people results leadership, respectively) which suggests that raters acquiesced toward the middle of the scale—this significant scale compression is an initial indication of potential problems with these outcome measures in a regression analysis. If there is little to no variance in the outcome measures, there is nothing for the predictors to account for in the regression equation.

Analytic Approach

The data analytic methods employed follow the outline of the overall research objective as well as the specific research questions for this study. In particular, hierarchical regression analysis and moderated multiple regression (MMR) were used to test the major research questions listed in Chapter 2 of this thesis (Aiken & West, 1991; Cohen & Cohen, 1983; Cohen, Cohen, West, & Aiken, 2003; Jaccard & Turrisi, 2003).

Of course, OLS regression is subject to an important set of assumptions: 1) correct specification of the form of the relationship between IVs and DVs; 2) correct specification of the IVs in the regression model; 3) no measurement error in the IV (perfect reliability); 4) constant variance of residuals (homoscedasticity); 5) independence of residuals; 6) normality of residuals (Cohen et al., 2003). In the current research, tests for violations of these OLS regression assumptions yielded no major violations for samples 1 and 2; however, sample 3 was characterized by some challenging issues (these issues are discussed more fully later, in Chapter 4).

Understanding the Constructs of Derailing and Dark Side Traits

Incorporating measures of derailment or the dark side of personality in the study of leadership means a better understanding of these measures is necessary. Although the intent here is not to provide a full-scale construct validation study, there are opportunities to look at several scale properties as well as bivariate relationships to develop an initial understanding of what these measures are doing. In order to assess these issues, a careful review of descriptive statistics, graphical analyses, and zero-order correlations were performed.

Incremental Prediction with Derailing and Dark Side Traits

Over the past several decades, leadership researchers have generally focused on the positive side of leadership, especially with respect to what personality traits are most predictive of various leadership/business outcomes or valuable leadership styles (e.g., transformational leadership). This tendency to focus on the positive side of leadership as well as those individual difference variables that help leaders be better, more successful, or more satisfying to work with ignores a very important aspect of leadership, in

particular, there are things leaders do that undermine their ability to accomplish results through other people. Stated another way, there are important individual difference variables that impede (theoretically and practically) a leader's ability to build and maintain relationships that allow them to get long-term, sustained results (the very essence of successful leadership). In an attempt to broaden the scope of leadership research, this particular portion of the analysis gets to, perhaps, the most important proposition in this research effort—does the inclusion of derailing/dark side traits account for incremental variance in the prediction of leadership outcomes or performance. Specifically, hierarchical regression analyses were employed to test the aforementioned question regarding accounting for incremental variance in the prediction of leadership outcomes. The leadership outcomes available in this study allow the researcher to compare the utility of these predictors across a variety of leadership outcomes (i.e., task versus relationship and task/relationship versus overall performance). As a point of departure, the hierarchical analysis initially compares single-step models with only FFM personality to a model with only derailing or dark side leadership included. From this initial point, the focal model is tested with FFM personality being added in Step 1 and derailing/dark side personality being added in Step 2 as a means to test the incremental variance hypothesis (i.e., do derailing or dark side personality traits account for additional variance in leadership outcome measures).

Assessing Emotional Stability (Adjustment) as a Moderator

In order to assess the interaction hypotheses outlined earlier in Chapter 2, the methods of MMR are employed. The key question focuses on whether trait emotional stability (adjustment on the HPI) moderates the relationship between derailing and dark

side personality variables. In essence, do the slopes from regressing leadership outcomes on derailing/dark side traits differ for those who are high on emotional stability (+ 1 SD) compared to those who are low (- 1 SD)? In order to test this question, two OLS regression equations are constructed. The full model includes the focal independent variable (derailing trait), the moderator (emotional stability), and the interaction term (product of derailing and emotional stability) while the comparison model contains both the focal independent variable and the moderator. A significant gain in predictive ability allows the researcher to infer the slopes for the moderator groups are, in fact, different. For this portion of the analysis, the recommendations of Jaccard and Turrissi (2003) and Aiken and West (1991) for group mean centering of the focal and moderator variables were followed.

Curvilinearity between Derailing/Dark Side Traits and Leadership Performance

The final research question investigates the nature of the bivariate relationship between derailing/dark side traits and leadership performance outcomes as a means to assess the form of the relationship and develop a deeper understanding. In particular, is this relationship curvilinear? In order to test this hypothesis, hierarchical regression was employed. Regression equations were computed by including the derailing/dark side trait in Step 1 and the squared value of that trait in Step 2. Similar to the tests of moderation (outlined above) the recommendations of Cohen et al. (2003) for group mean centering were followed for this analysis. Significant curvilinear (quadratic) trends result when the second step produced a significant increment in variance accounted for and the regression coefficient for the squared term is significant. Even though this particular test is viewed by the researcher as exploratory, it potentially adds information to the field's general

understanding of what these derailing/dark side traits are, how they affect leadership performance, and how they can best be used in research and practice.

Chapter Four

Results

To address the research objective and questions, there are five major sections to the analyses. First, the initial analyses address research question one and provide a more robust description of what these derailing/dark side traits are. Second, hierarchical regression analysis is employed as a means to determine whether adding the derailing/dark side traits account for incremental levels of variance in the prediction of leadership outcomes above and beyond that of the FFM traits. Third, the analyses assess the role of emotional stability/adjustment moderating the relationship between derailing/dark side traits and leadership outcomes. Fourth, quadratic terms are added to the equation regressing leadership outcomes on the derailing/dark side traits to investigate the possibility of a curvilinear relationship between the two variables. Fifth, post hoc analyses were performed as a means to investigate the possibility of derailing/dark side traits being most influential in an additive model framework (i.e., relationships at the individual scale level do not fully capture the nature of the relationship, rather higher-order composites are required)⁷.

Initial Analyses

Tables 28 – 32 show means, standard deviations, and correlations among all study variables for each of the three samples individually. There are a number of interesting observations to be made from the information contained in these tables that bear directly on research question number one. These observations are arranged around four categories: questions of convergent and divergent validity, relationships to outcome

⁷ The sample for this project consists of three separate samples and sample 1 uses different measures from samples 2 and 3. To increase clarity and readability, the results are presented in order of the research questions addressed for all samples as opposed to all research questions for each sample sequentially.

variables, the structure of derailing/dark side traits, and assessing the distinction between derailing dark side traits and the FFM traits.

Construct Validity Issues and Relationships to Outcome Variables. As mentioned in an earlier chapter, the current study was not designed (nor intended) to be a complete construct validation study; however, an initial assessment of relationships was possible with the current data. The correlation matrices presented in Tables 28, 31, and 32 show a consistent pattern of correlations that support convergent and divergent claims. For instance, the correlations between FFM traits are consistent across samples and with past research (Barrick, Mount, & Gupta, 2003; Barrick, Mount, & Judge, 2001; Barrick, Mount, & Strauss, 1993) as well as with outcome variables. The notable exception is the pattern of correlations between the GPI FFM traits in sample 1, which are higher than normally reported in the literature⁸. Specifically, the correlations between the majority of the FFM traits and leadership outcomes (i.e., extraversion and agreeableness) are in the predicted direction and similar in magnitude to past research supporting convergent validity (Bono & Judge, 2004; Judge & Bono, 2000; Judge et al., 2002). Additionally, as expected, the vast majority of derailing/dark side traits have significant, negative correlations with the leadership outcomes of interest⁹. Furthermore, the correlations between derailing traits and between dark side traits organized under the same theme (i.e., moving away, moving against, moving toward) are higher than correlations between these traits and FFM traits with a few exceptions between moving away dark side traits and adjustment (i.e., the correlation between adjustment and excitable is $-.71, p < .01$).

⁸ One potential reason for this discrepancy is how the GPI combines facet scales to reach the higher order scales. For instance, achievement orientation-type facets load on the extraversion factor as opposed to most other measures that classify this as a facet of conscientiousness.

⁹ The exception to the reported pattern occurs in sample 3 and this difference in the correlation matrix is the first indication that this sample may have some structural issues which are discussed later in the paper.

With respect to the correlations between FFM traits and derailing/dark side traits, these correlations demonstrate patterns consistent with expectations (e.g., higher levels of interpersonal dysfunctionality should be negatively related to agreeableness-type traits and emotional stability/adjustment) and support divergent and convergent validity claims. For instance, all correlations between emotional stability/agreeableness and the derailing traits in sample 1 are zero or negative (see Table 28). In samples 2 and 3, all of the moving away scales have significant negative correlations with adjustment and interpersonal sensitivity (agreeableness). Also noteworthy, in samples 2 and 3, are the correlations between ambition/sociability (extraversion-type traits) and the moving against traits. With the exception of one correlation out of the 16, all are significant and positive as one would expect between extraversion and a set of traits designed to measure risk-taking, outward expression, flamboyance, and other related areas (Hogan & Hogan, 2001). These findings with extraversion and moving against traits further support claims of convergent validity. Overall, these patterns of correlations provide support for hypothesis 1a.

Structure of Derailing/Dark Side Traits. As reported above, the correlations between dark side traits and their associated, theoretical higher-order scales indicate consistency with Horney's theory (Hogan & Hogan, 2001); however, analysis of individual bivariate relationships is not, by itself, compelling. A two-step process including both exploratory and confirmatory factor analysis (EFA & CFA) was employed to specifically test hypothesis 1b. In the first step, CEFA 2.0 (Comprehensive Exploratory Factor Analysis; Browne, Cudeck, Tateneni, & Mels, 2004) was used to evaluate the factor structure of an unpublished, archival correlation matrix ($N = 16528$;

Hogan Assessment Systems, 2006). One of the advantages of the CEFA 2.0 program is that the user specifies the number of factors to extract. Additionally, the program provides traditional fit measures (i.e., RMSEA) as well as the Expected Cross Validation Index (ECVI; Browne & Cudeck, 1993). A comparison of a 1-factor, 2-factor, 3-factor, and 4-factor solution was performed. Both the 1-factor and 2-factor models were discarded based on RMSEA values exceeding acceptable levels ($RMSEA > 0.10$) while the 3-factor model had an RMSEA value of .085 demonstrating marginal fit and the 4-factor model had an RMSEA of .043 and passed the test of close fit (Browne & Cudeck, 1993). After closer review, the 4-factor model was rejected in favor of the 3-factor model based on the uninterpretability of the 4-factor solutions as well as the comparison of the ECVI values (see Tables 33a and 33b). Furthermore, the pattern of factor loadings verified convergence with the theoretical 3-factor, higher-order model of the dark side traits proposed by Hogan and Hogan (1997, 2001) while also suggesting some potential model modifications required for the CFA performed in step 2.

Based on the results of EFA, Lisrel 8.8 (Joreskog & Sorbom, 1996, 2006) was employed to evaluate the fit of a 3-factor model. To increase sample size, the dark side trait scores for samples 2 and 3 were combined and submitted to Lisrel 8.8 for analysis ($N = 589$). The initial 3-factor model (see Figure 13a for the 3-factor measurement model) was fitted with a single path from each scale to only one latent variable (as proposed in the Hogan Model). Judged solely on the RMSEA value, this model showed poor fit ($\chi^2(41) = 381.95, p < .01$; $RMSEA = .119$; see Figure 13b). In line with recommendations of Maruyama (1998), additional absolute fit indices were evaluated. The standardized root mean square residual (SRMR) value was 0.10 and the Goodness of

Fit (GFI) and Adjusted Goodness of Fit (AGFI) Indices were .86 and .83, respectively and these values are still outside acceptable ranges. As a comparison (and based on the results from step 1), a 3-factor model, allowing the HDS skeptical and cautious scales to load on both moving away and moving against yielded a moderately good fit (χ^2 (39) = 221.51, $p < .01$; RMSEA = .089) with a SRMR, GFI and AGFI of .069, .94, and .89, respectively. One final modification to the 3-factor model allowed three error covariance terms to vary freely resulting in an RMSEA value of .069 and SRMR, GFI, and AGFI values of .057, .96, and .93, respectively (see Figure 13c).

Although the CFA results and overall model fit statistics do not quite reach levels of “good” fit based on individual, conventional fit index cutoffs, using the alternative 2-index strategy based on RMSEA and SRMR proposed by Hu and Bentler (1999) suggests that the proposed models are likely to closely represent the true population model. Additionally, the combination of results from steps 1 and 2 indicate that there is merit to the theoretical specification of three higher-order factors when one evaluates the structure of the dark side traits as measured by the HDS. Given this set of empirical results, the following can be concluded. First, results provided partial support for hypothesis 1b; therefore, the higher-order factors should be used in the subsequent regression analyses. Second, the nature of the relationships between the dark side scales measured by the HDS do have a higher-order structure, but that exact structure may be more complex than can be accounted for by the themes proposed in Horney’s Taxonomy.

Based on the tentative results for a higher-order factor structure for the HDS, a similar CFA analysis was conducted for the five derailing traits measured by the GPI. The initial 1-factor model (measurement model shown in Figure 14a) yielded a poor

fitting model ($\chi^2(5) = 85.45$, $p < .01$; RMSEA = .11) with respect to the RMSEA value; however, the SRMR, GFI and AGFI were .042, .97, and .92, respectively, indicating a better fit. By setting the error covariances terms between ego-centered and passive aggressive and intimidating and passive aggressive free, the RMSEA value improves to .057, the test of close fit is significant ($p > .05$), the SRMR is .017, and the AGFI is .98 (see Figure 14b) and the fit is assessed as good (Hu & Bentler, 1999). Conceptually, freeing these error covariances makes sense because ego-centered and intimidating represent, theoretically, the active and dominant tendencies that lead to interpersonal dysfunction, while passive aggressive is best represented by more submissive and withdrawn aspects that can still lead to interpersonal problems. Similar to the support for using higher-order factors to represent the dark side traits, this analysis indicated that using a single, higher-order derailing composite was supported empirically.

In light of this empirical support, it is worthwhile to digress briefly to understand what we might expect from a person who scores highly on this new composite variable. Similar to the theory underlying the dark side trait development, the derailing traits can be viewed as quasi-leadership techniques, which may work in the short term, but ultimately erode trust and support from those around the leader and are not successful in the long-term. The focus on erosion of trust and support draws clear links to long-term problems with interpersonal relationships. Furthermore, elevated scores can be understood along three distinct lines: 1) a tendency to be dominant and aggressive in seeking attention and results (ego-centered and intimidating), 2) a tendency to be controlling and goal-oriented (i.e., results at any cost; manipulation and micro-managing), and 3) a tendency to be withdrawn and often say one thing but do another

(passive aggressive). Consistent across these conceptual areas is action (or inaction in the case of passive aggressive) on the part of the leader at the expense of those around him or her which ultimately can lead to long-term interpersonal problems that make it difficult to achieve organizational goals through the collective effort of the group. It is also likely that as support diminishes it can start a downward spiral that leaves the leader no choice but to rely more heavily on these ineffective traits and consequently degrade interpersonal relationship even further. Although high scores on the composite might not delineate the specific nature of the interpersonal dysfunction, it is clear that interpersonal dysfunction including lack of trust and support will be present.

Distributional Analysis. Tables 11, 20, and 26 show the distributional properties for the derailing/dark side traits and Figures 3, 8, and 10 graphically represent these trait distributions. As shown in Table 11, only one of the derailing traits (intimidating) has a skewness statistic outside the 95% confidence interval constructed with the standard error of measurement. On the other hand, in samples 2 and 3, 8 of the 11 and 6 of the 11 dark side traits, respectively, have skewness statistics outside the 95% CI. These results can be viewed graphically in Figures 8 and 10. On one hand, the GPI manual asserts that these derailing traits are normal bandwidth traits; therefore, it is not surprising these distributions were more normally distributed (ePredix, 2001). On the other hand, the HDS was designed with the goal of tapping into the “middle space” between normal and abnormal personality to assess an individuals’ tendency toward interpersonal dysfunctions (Hogan & Hogan, 2001). With respect to the total research sample, the sample 1 derailing trait scales are not distributionally different from FFM traits; however, samples 2 and 3 do demonstrate distributions that are skewed and distributionally

different from FFM distributions; thus, partial support for hypothesis 1c can be concluded.

Supplemental Analysis. Given modest support for the higher-order factor structure of both the derailing traits as well as the dark side traits, it is possible to reevaluate hypothesis 1b with additional analyses. To further test the question of whether the derailing/dark side traits are distinct from the FFM traits, the higher-order derailing composite (sample 1) and the three dark side composites were regressed on the FFM traits (as a set). If the derailing/dark side traits are not distinct entities, then the FFM traits should be able to predict the composite values perfectly (or near perfectly) if we had access to the true scores on these variables. Given that the only scores the researcher had access to are observed scores, the upper bound of the predictive ability is fixed by the reliability of the composite of predictors, in this case the FFM traits as a set. Based on guidance from Hunter and Schmidt (1990, p.461), the reliability of the composite for the set of FFM traits can be calculated to establish the upper bound (see also Novick & Lewis, 1967; Raykov, 1998). The reliability for the GPI FFM traits as a composite is .85 and for the HPI FFM-like traits is .68 (based on the archival sample). A total of seven regressions were analyzed across all three samples (one for sample 1 and 3 each for samples 2 and 3). With respect to the FFM traits predicting the derailing composite, the R^2 for the equation was 0.38 indicating that 34% of the reliable variance in the derailing composite is unaccounted for by the FFM traits (based on the upper limit set by the composite reliability estimate). For samples 2 and 3, the FFM traits predicting the moving away, moving against, and moving toward composites individually, yielded the following results: R^2 values of .47, .29, and .21, respectively, for sample 2 and .59, .37,

and .21, respectively, for sample 3. With respect to these composites, the reliable variance left unaccounted for by the set of FFM-like traits from the HPI ranges from 0%/0% in the case of the moving away composite, 17%/ 9% for the moving against composite, and 25%/25% for the moving toward composite for samples 2/3, respectively. The FFM traits of the HPI account for more variance than the FFM of the GPI (sample 1), but still leave some variance unaccounted for by the FFM trait composite. These results provide modest additional support for hypothesis 1a that even though there is overlap between the measures, the derailing/dark side traits are somewhat distinct from the FFM traits (these results are different from Furnham & Crump, 2005, but these authors did not fix the upper bound to account for the composite reliabilities and the regressions were performed at the dark side scale level as opposed to the composite level).

Incremental Variance Analysis

Results of the hierarchical regression analysis testing hypotheses 2a and 2b are reported separately for each sample and associated leadership performance outcome variables in Tables 34 – 43. Three regressions are reported for each criterion: a model with only the FFM traits included, a model with only the derailing/dark side traits included, and a model with all variables included. All tables reporting the tests for incremental variance accounted for by the derailing/dark side traits show unstandardized regression coefficients, the unstandardized SE, the associated 95% CI, and standardized regression coefficients (β). Additionally, model summary information consisting of Multiple R, R^2 , ΔR^2 , Adjusted Multiple R, and Adjusted Multiple R^2 is presented for each separate leadership outcome. Finally, based on the results reported above regarding

higher-order factor structure for both the derailing traits and the dark side traits, all subsequent regression analyses are conducted with these higher-order composite variables as predictors (not individual scales).

Although the initial analyses provided an interesting look at the bivariate relationships, is it enough to know that the pattern of zero-order correlations was consistent and showed the expected negative relationships with the leadership outcome variables? Clearly, the answer to this question is no. In order to be considered useful, these derailing/dark side traits should be able to predict incrementally above and beyond the established FFM traits as a set.

Sample 1. The leadership outcomes of interest in sample 1 consist of composite leadership scores derived from competency ratings from an assessment center and include: overall leadership, getting ahead leadership (task focus), and getting along leadership (interpersonal focus). Across all three criteria, the R^2 for the full model (FFM traits and derailing composite) and the ΔR^2 for adding the derailing composite were significant (see Tables 34 – 36). Specifically, with overall leadership as the criterion, the model produced an $R^2 = .13$ ($p < .01$) and $\Delta R^2 = .02$ ($p < .01$); with getting ahead leadership as the criterion, the model produced an $R^2 = .16$ ($p < .01$) and $\Delta R^2 = .02$ ($p < .01$); with getting along leadership as the criterion, the model produced an $R^2 = .10$ ($p < .01$) and $\Delta R^2 = .02$ ($p < .01$). Noteworthy among the individual coefficients for these prediction equations was that all standardized coefficients for the derailing composite, across all criteria, were negative (-.19, -.18, and -.15) and significant (all $p < .01$). These negative coefficients indicate that higher levels of the derailing composite are related to lower objective, behaviorally-based ratings of leadership performance across both task

and relationship measures. The reported results for sample 1 are in support of hypothesis 2a but fail to support hypothesis 2b since the increment to R^2 was not larger for the more interpersonally-based measure of leadership.

Sample 2. Tables 37 – 41 present the results of the hierarchical regression analysis for FFM model traits and the three higher-order composites of the HDS predicting leadership outcomes. For this sample, there were five leadership criteria (composite leadership ratings) to be evaluated: overall leadership, business leadership, results leadership, people leadership, and self-leadership. Similar to sample 1, across all leadership criterion the addition of the three dark side composites yielded a significant model R^2 and ΔR^2 . For overall leadership as the criterion, the model produced an $R^2 = .16$ ($p < .01$) and $\Delta R^2 = .05$ ($p < .01$); for business leadership as the criterion, the model produced an $R^2 = .15$ ($p < .01$) and $\Delta R^2 = .04$ ($p < .01$); for results leadership as the criterion, the model produced an $R^2 = .15$ ($p < .01$) and $\Delta R^2 = .05$ ($p < .01$); for people leadership as the criterion, the model produced an $R^2 = .12$ ($p < .01$) and $\Delta R^2 = .03$ ($p < .05$); for self-leadership as the criterion, the model produced an $R^2 = .15$ ($p < .01$) and $\Delta R^2 = .04$ ($p < .01$). With respect to the regression coefficients for the individual predictors, three results are important. First, across all criterion variables, the standardized coefficients are negative and significant for the moving away composite. This indicates that leaders who cope with times of high workload, stress, and crisis by hiding in their offices, failing to make decisions, or having emotional tantrums are rated as less effective. Second, the moving toward composite is significant across all leadership criterion, but the sign is positive, indicating higher levels of this composite are related to higher leadership ratings. One possible interpretation of this is that the moving

toward composite consists of two variables that are related to prudence (conscientiousness) and making favorable impressions, especially on superiors; therefore, it is possible this composite is capturing that portion of the variance. Third, the zero-order correlations indicated moving away was closely related to adjustment and this is further supported here. When the dark side composites are added to the regression, the coefficient for adjustment is no longer significant, and it replaced by a significant coefficient for moving away, suggesting that this composite might be accounting for overlapping variance with adjustment as well as adding to the incremental change. As was the case with sample 1, sample 2 provides robust support for hypothesis 2a, but no support for hypothesis 2b. In fact, the reported ΔR^2 of .03 for people leadership as the criterion, although a significant increment, was the smallest increment for any of the leadership criteria in this sample.

Sample 3. As noted in a footnote earlier in this chapter, even at the bivariate level, sample 3 was not consistent with the other samples with respect to the reported relationship between the predictors and outcome variables. However, even though none of the zero-order correlations between FFM/dark side traits and leadership outcomes was significant, this portion of the analysis added the variables as sets to the regression equations. The leadership criterion for this sample consisted of a separate, global supervisory assessment of business results leadership and people results leadership. The results presented in Tables 42 – 43 depart from the results of sample 1 and 2. In fact, the model R^2 and the ΔR^2 for business results leadership are not significant ($p > .10$). Using people results leadership as the criterion, the overall model is significant $R^2 = .09$ ($p < .05$), but the ΔR^2 of .02 is not significant. A closer examination of the leadership

criterion variables indicate two problems that certainly contribute to the divergence from the other results. First, these ratings were made on a 5-point scale; however, significant scale compression (and consequently smaller variance) is present decreasing the likelihood that, even if the predictor variables are related to the outcome, there is any meaningful amount of variation to account for in the criterion measures. Second, careful review of the regression diagnostics and the residuals from the regression equation show problems with three regression assumptions: 1) normal distribution of residuals, 2) independence of residuals, and 3) constant variance (homoscedasticity). In light of these issues, extreme caution should be used when considering or interpreting the meaningfulness of these results; regardless, the reported results from sample 3 fail to support hypothesis 2a or 2b.

Emotional Stability/Adjustment as a Moderator Between Leadership Performance and Derailing/Dark Side Composites

Tables 44 – 53 present the results of the moderated multiple regression analysis testing hypothesis 3 separately for each individual leadership outcome. All moderated regression analyses follow a 2-step process. Step 1 adds the main effects and step 2 adds the product term of the two main effects. For these analyses, all main effects variables have been group mean centered (and the interaction term is a product of the centered main effects); therefore, main effects regression coefficients from the final step can be interpreted as conditional probabilities (Aiken & West, 1991; Cohen et al., 2003; Jaccard & Turrisi, 2003).

Sample 1. Tables 44 – 46 report the unstandardized and standardized regression results for sample 1. The addition of emotional stability and the derailing composite

accounted for significant incremental variance across all leadership criteria (overall leadership: $\Delta R^2 = .10$, $p < .01$; getting ahead leadership: $\Delta R^2 = .11$, $p < .01$; getting along leadership: $\Delta R^2 = .07$, $p < .01$). In support of hypothesis 3, the derailing composite X emotional stability interaction term added significant incremental variance in step 2 for each of the leadership criteria (overall leadership: $\Delta R^2 = .009$, $p < .01$; getting ahead leadership: $\Delta R^2 = .003$, $p < .05$; getting along leadership: $\Delta R^2 = .004$, $p < .05$).

Figures 15 – 17 illustrate the interactions for each leadership criterion, respectively. Three levels of emotional stability are plotted: 1 SD below the mean, at the mean, and 1 SD above the mean (Aiken & West, 1991; Jaccard & Turrissi, 2003). Even though the effects depicted in the figures would not be classified as large effects, they are in the predicted direction. The slopes for all groups are negative; however, the regression line for those leaders with higher levels of emotional stability (+ 1 SD) is not as steep as for those leaders with lower levels of emotional stability (- 1 SD). That is to say, leaders with higher levels of emotional stability experience smaller decrements in leadership performance across all types of leadership criterion. With respect to hypothesis 3, this sample provides partial support in that emotional stability did moderate the relationship between the derailing composite and leadership performance, but this effect was not larger for the more interpersonally-based leadership criterion.

Sample 2. Tables 47 – 51 report the unstandardized and standardized regression results for sample 2. For this sample, interaction effects were tested for each of the three dark side composites for each of the five leadership criteria (a total of 15 interaction terms were tested). With respect to the dark side composites of moving away and moving toward, the addition of the interaction term between adjustment and either of

these two dark side composites did not add significant incremental variance for any of the five leadership criteria. With respect to the dark side composite moving against, the addition of the interaction term between adjustment and moving against did add significant incremental variance across all five leadership criteria (overall leadership: $\Delta R^2 = .02$, $p < .01$; business leadership: $\Delta R^2 = .02$, $p < .05$; results leadership: $\Delta R^2 = .02$, $p < .05$; people leadership: $\Delta R^2 = .03$, $p < .01$; self leadership: $\Delta R^2 = .03$, $p < .01$;). Given that only 5 of the 15 interaction terms were significant, hypothesis 3 is partially supported by this sample. Additional support for this hypothesis can be derived by the fact that the people and self leadership criteria, which are more interpersonally-based, had the largest effect sizes (i.e., ΔR^2).

Figures 18 – 22 illustrate the interactions between adjustment and the dark side composite moving against for each leadership criteria, respectively. Again, three levels of the moderator (in this sample, adjustment) are plotted: 1 SD below the mean, at the mean, and 1 SD above the mean (Aiken & West, 1991; Jaccard & Turrissi, 2003). The effects depicted in these figures are larger than those found in sample 1 and also operate in the predicted direction. Although similar to the interactions plotted for sample 1, one major exception emerges in this sample—the slope of the regression line for the group represented by + 1 SD is positive while the slopes for the mean and – 1 SD groups are negative. That is to say, leaders with higher levels of adjustment experience actually experience a slight positive increment to predicted leadership performance (across all types of leadership criteria) as their scores on the moving against composite increase, while the leaders with lower levels of adjustment are linked to lower predicted performance values as their scores on the moving against composite increase.

Sample 3. Tables 52 – 53 report the unstandardized and standardized regression results for sample 3. Similar to sample 2, interaction effects were tested for each of the three dark side composites for each of the two leadership criterion (a total of ten interactions were tested). Of the ten possible interaction terms, only one of them was significant (moving toward X adjustment; $\Delta R^2 = .03$, $p < .05$). However, given the problems with the leadership criteria for this sample, the violation of regression assumptions, and the fact that neither of the main effects with this interaction is significant, the interaction is not plotted nor was any attempt made to interpret the interaction. The results based on sample 3 do not support hypothesis 3.

Curvilinear Relationship Between Leadership Performance and Derailing/Dark Side Composites Analysis

Tables 54 – 63 present the results of the hierarchical multiple regression analysis testing hypothesis 4 separately for each individual leadership outcome across the three separate samples. All regression analyses follow a 2-step process. Step 1 adds the composite variable as the sole predictor and step 2 adds the squared composite term. For these regressions, the composite variable has been group mean centered (and the quadratic term is the squared value of the group mean centered composite); therefore, the zero point on the x-axis represents the mean value of the derailing/dark side composite of interest (Aiken & West, 1991; Cohen et al., 2003).

Sample 1. Tables 54 – 56 report the unstandardized and standardized regression results for sample 1. With respect to the linear trend, evaluated by step one of the regressions described above, the derailing composite accounts for significant variance and all coefficients are negative (the expected direction). The individual leadership

criteria linear trend results are: overall leadership $\Delta R^2 = .06$, $p < .01$; getting ahead leadership: $\Delta R^2 = .03$, $p < .01$; getting along leadership: $\Delta R^2 = .06$, $p < .01$). In support of hypothesis 4, the squared derailing composite term added significant incremental variance in step 2 for each of the leadership criteria (overall leadership: $\Delta R^2 = .01$, $p < .01$; getting ahead leadership: $\Delta R^2 = .01$, $p < .05$; getting along leadership: $\Delta R^2 = .01$, $p < .01$). Given that the regression coefficients for both predictors are negative, the best description of the shape of the resulting curve is a predominantly negative, concave downward curve as opposed to an inverted U shape (Aiken & West, 1991).

Figures 23 – 25 illustrate the scatterplot of the leadership performance derailing composite relationship with the quadratic trend line superimposed on the scatterplot. Visual inspection of these figures indicates that the maximum point on the curve occurs approximately 1 raw score unit below the mean of the derailing composite. In fact, using equation 6.2.5 from Cohen et al. (2003, p. 206) the point estimates for this maximum value can be solved. The corresponding maximum values for overall leadership, getting ahead leadership, and getting along leadership are -1.1, -1.0, and -1.4 raw score units below the mean of the derailing composite, respectively. That is to say, beyond these maximum values, increases in raw scores on the derailing composite correspond to decreasing leadership performance scores. With respect to hypothesis 4, this sample provides support that the relationship between performance and the derailing composite is curvilinear and represented by a predominantly negative, downward concave curve.

Sample 2. Tables 57 – 61 report the unstandardized and standardized regression results for sample 2. With respect to the linear trend, evaluated by step 1 of the regressions described above, both the moving away and the moving against composites

account for significant variance and all coefficients are negative (the expected direction) across all leadership outcomes. The individual leadership criteria linear trend results for moving away are: overall leadership $\Delta R^2 = .10$, $p < .01$; business leadership: $\Delta R^2 = .08$, $p < .01$; results leadership: $\Delta R^2 = .08$, $p < .01$; people leadership $\Delta R^2 = .09$, $p < .01$; self leadership $\Delta R^2 = .09$, $p < .01$. The individual leadership criteria linear trend results for moving against are: overall leadership $\Delta R^2 = .02$, $p < .05$; business leadership: $\Delta R^2 = .02$, $p < .05$; results leadership: $\Delta R^2 = .02$, $p < .05$; people leadership $\Delta R^2 = .02$, $p < .05$; self leadership $\Delta R^2 = .02$, $p < .05$. All linear trends for the moving toward composite were not significant. In partial support of hypothesis 4, the squared moving against composite term added significant incremental variance in step 2 for each of the leadership criteria (overall leadership $\Delta R^2 = .02$, $p < .015$; business leadership: $\Delta R^2 = .01$, $p < .05$; results leadership: $\Delta R^2 = .01$, $p < .05$; people leadership $\Delta R^2 = .01$, $p < .05$; self leadership $\Delta R^2 = .01$, $p < .05$). All of the quadratic terms for the moving away and moving toward composites failed to reach significant levels of ΔR^2 . Similar to sample 1, the negative sign on both the predictors indicates a predominantly negative, concave downward curve (Aiken & West, 1991). The significant linear trend only for the moving away variable suggests that increased levels of this trait composite are detrimental across the range of scores whereas the curvilinear trend on the moving against composite supports the idea that some level of risk-taking, grand thinking, and performance skills (up to a point) are beneficial to leadership performance.

Figures 26 – 30 illustrate the scatterplot of the leadership performance moving against composite relationship with the quadratic trend line superimposed on the scatterplot. Visual inspection of these figures indicates that the maximum point on the

curve occurs approximately 2.0 raw score units below the mean of the moving against composite. Again, using equation 6.2.5 from Cohen et al. (2003, p. 206) the point estimates for this maximum value correspond to -1.5 raw score units below the group mean for the moving away composite (a raw score value of 5.3 on the scale ranging from 0 to 14). That is to say, beyond this raw score value, increases in the moving against composite correspond to decreasing leadership performance scores. With respect to hypothesis 4, this sample provides partial support that the relationship between performance and the higher-order dark side composites are curvilinear since only the moving against composite supported a curvilinear relationship in the form of a predominantly negative, downward concave curve.

Sample 3. Tables 62 – 63 report the unstandardized and standardized regression results for sample 3. Consistent with the analysis for research questions two and three, and the problems identified with the leadership outcome measures in this sample, all hierarchical regression analyses associated with the curvilinear trend between dark side composites and leadership performance were not significant.

Post Hoc Analyses and an Additive Model¹⁰

At various points in this thesis, in particular Chapters 1 and 2, a significant amount of space and attention has been devoted to the proposition that the derailing/dark side traits not only occupy a distinct space on the personality continuum, but also that they might be best conceptualized as higher-order factors even when they are measured at the individual scale level. For instance, the five derailing traits from the GPI are better represented (at least for selection and prediction) as a single composite. In fact, the initial

¹⁰ Given the issues surrounding the scale compression of the outcome measures and regression assumption violations for sample 3 that sample has been dropped from the post hoc analysis.

phase of the current analysis employed both EFA and CFA to empirically justify the use of these higher-order factors in all of the analyses that followed. Indeed, one might argue that this generally consistent pattern of findings for the three major research questions involving incremental variance accounted for, the role of emotional stability/adjustment as a moderator, and the curvilinear relationship between leadership performance and the derailing/dark side traits provide a partial support for the proposed additive model when considering the derailing/dark side traits. However, it is only a partial answer in that there was no direct comparison to what occurs at the scale level of analysis. It would be possible for someone to argue for the existence of a single trait for each composite that drives the relationships at the composite level. No matter how unlikely this might seem, at present, this research effort has not addressed the question directly; therefore, supplemental analysis conducted at the scale level is summarized below to address this possible concern and attend to the proposition of the derailing/dark side traits operating as an additive model.

The supplemental analysis progressed in three stages. Stage I consisted of reanalyzing research question two (incremental variance hypothesis) at the scale level for the derailing/dark side traits. Stage II consisted of the same scale level reanalysis of the moderation research question. Finally, Stage III reinvestigated the nature of the curvilinear relationship between scale-level derailing/dark side traits and leadership outcomes. Summary information for each stage of the post hoc analyses has been tabulated and is located in Tables 64 – 75 (Tables 64 – 71 provide a detailed review of the incremental variance accounted for using the scale level variables instead of the higher-order composites; see below).

Incremental Variance. Tables 64 – 71 present the results from the scale-level analysis for sample 1 and 2. With respect to sample 1, intimidating and manipulation are the only scales that are significant and they are significant for all three leadership outcomes. Looking at model performance, one should compare the adjusted R^2 values in order to ensure a fair comparison since the scale-level models have a certain mathematical advantage simply based on a larger number of predictors included in the model. The differences in adjusted R^2 values ranged from a low of .001 (getting ahead leadership) to a high of .015 (getting along leadership). The consistency of intimidating and manipulation across outcomes indicate these scales may occupy a primary role; however, overall model performance is nearly identical for the derailing composite.

Turning to sample 2, the pattern is less clear. Of the 55 possible significant scale values, the data produce only 8 significant values with the majority of these found in the scales that comprise the moving away scale. Recall from the initial incremental analysis that moving away was significant across all five leadership outcomes. Comparing the adjusted R^2 values, the lowest difference is .001 and the highest is .013, suggesting that model performance is not drastically different.

Interaction Analysis. To test the interaction terms at the scale level required 15 regressions for sample 1 and 55 regressions for sample 2. Obviously, one needs to be concerned with the possibility of capitalizing on chance with this large number of regressions being performed. In the case of sample 1, 6 of the 15 interaction terms were significant and in the case of sample 2, 13 of the 55 were significant (see Tables 72 and 74). With respect to consistent patterns, the micro-managing and passive aggressive scales in sample 1 (no other scales were significant) and the colorful scale in sample 2

were the only scales that were significant across all leadership outcomes. Recall from the composite level analysis that the derailing composite and the moving against composite yielded significant interaction terms. Given the nature and pattern of significance, at best, there is modest support for an additive model. Specifically, moving against is significant at the composite level, however, 8 of the 20 possible scale level interactions also reached significant levels. Alternatively, perhaps the micro-managing and passive aggressive scales in sample 1 and the colorful and bold scales in sample 2 are driving the significance of the interaction term at the composite level.

Curvilinear Analysis. Tables 73 and 75 present the summary results from the scale-level analysis of the curvilinear research question. In sample 1, only 2 of the 15 quadratic terms are significant and they are both from the passive aggressive scale. For sample 2, 12 of the 55 quadratic terms are significant with 11 of those significant terms found for the excitable, skeptical, and diligent scales. Particularly noteworthy is the fact that at the composite level moving against had a significant linear and quadratic trend; however only 1 of the possible 20 quadratic terms across these four scales is significant (chance levels). This last piece of data is perhaps the best support for existence of an additive effect.

The post hoc analyses were carried out in an attempt to further support the overall research objective of developing a more robust understanding of the role of derailing/dark side traits as predictors in the leadership domain. Although no precise answer emerged from the supplemental analysis with respect to the notion of whether or not these traits operate more appropriately as an additive model or at the individual scale level, it is clear that inclusion of these traits, whether at the scale level or composite level, has much to

offer to the study of leadership. Ultimately, the best approach is to carefully consider the purpose for implementing these measures and match the predictors to criteria of interest (e.g., Bartram, 2005; Campbell, 1990; Hogan & Holland, 2003) ensuring that bandwidth-fidelity tradeoff is considered (Hough et al., 1998; Ones & Viswesvaran, 1998).

Chapter Five

Discussion

Over the past decade or so there has been an explosion in the number of instances of corporate malfeasance and leadership wrong-doing in the United States and the rest of world. This ever-increasing display of failed leadership has resulted in corporate officers being sentenced to jail terms (most recently in the case of Enron) and Congress passing the Sarbanes-Oxley Act that codifies rules for corporate behavior and accounting practices as a means to protect investors. Of course, the majority of these instances of failed leadership happen at a level that is uncommon to many of us; but it is worth considering how common such failures actually are. Although not all executive appointments end in illegal activity and jail time, Fernandez-Araoz (1999) asserts that 30-50% of all executive appointments end in termination or resignation. Given the high stakes environment that includes searching for, recruiting, selecting, and hiring executive level personnel, this failure rate is somewhat startling. However, even more startling, is what happens when we consider what the failure rate might be at a much lower organizational level, for instance, entry-level leaders or mid-level management. Perhaps Hogan's assertions that the base rate of managerial incompetence is between 60-75% is not as unreasonable after all (cf. Hogan, 2006; R. Hogan & J. Hogan, 2001). Even if the rate is half of Hogan's assertion, that is simply too high—we, as a collective group of leadership researchers and practitioners, possess both the knowledge and skills to combat this potentially disastrous problem among the ranks of our leaders at all levels.

The past 20 years of leadership research has focused predominantly on the study of charismatic and transformational leadership (Den Hartog & Koopman, 2002; House &

Aditya, 1997; Yukl & Van Fleet, 1992). As discussed in Chapter 1, the very recent past has seen the emergence of a different stream of research that focuses on leveraging one's strengths (oftentimes at the expense of developing weaknesses), developing "authentic" leadership and followership qualities, and invoking many tenets from the realm of positive psychology (for example Avolio & Gardner, 2005; Avolio et al., 2004; George, 2003; Rath & Clifton, 2004; Seligman & Csikszentmihalyi, 2000; Zenger and Folkman 2002). Although this is an important stream of research, it largely ignores what we know about managerial derailment and its causes and consequences (Lombardo et al., 1988; McCall & Lombardo, 1983; Van Velsor & Leslie, 1995). The current research study examines this latter side of the prediction equation; that is to say, it is more interested in predicting ineffectiveness (i.e., potential for failure/derailment) than effectiveness or success by including derailing/dark side trait measures (essentially measures of interpersonal dysfunctions and shortcomings) along with the well established set of FFM traits. Bottom line: a significant number of people go to work everyday with the unfortunate lot of having to endure working for poor or ineffective leaders and this situation ultimately leads to individual disenfranchisement, but more importantly to decrements to organizational efficiency, effectiveness, and success.

The goal of the present study was to broaden the scope of the predictor-criterion linkage research in the leadership domain by specifically examining the influence of derailing/dark side traits across a variety of leadership outcomes (and types of leadership outcomes). Broadly speaking, the addition of the derailing/dark side traits enhanced the prediction of leadership performance criteria on eight of the ten outcomes investigated. The additional variance accounted for ranged from 2% - 5% above and beyond that

accounted for by the set of FFM traits. Additionally, partial support for the role of emotional stability/adjustment as a moderator and the nature of the curvilinear relationships represent more novel findings, and these findings are encouraging and add to the unique and valuable contribution of the current research endeavor. The remainder of this chapter discusses the specific findings for each hypothesis individually (and across samples), addresses the strengths and limitations of the study, and offers some directions for future research.

Research Question One: Are These Derailing/Dark Side Measures?

With respect to developing a better understanding of exactly what these derailing/dark side measures are, both univariate and multivariate results help establish convergent and divergent validity. Convergent validity is indicated by the pattern of correlations for the derailing/dark side measures with themselves and with specific FFM traits. For example, in sample 1 the vast majority of derailing trait correlations within these scales is higher than the correlations between derailing and FFM traits. For samples 2 and 3, this same pattern is present with the notable exception that the correlations between dark side traits show their highest correlations with the other scales that are theoretically assigned to the higher-order composite scales (i.e., moving away, moving against, and moving toward). The exception here is with adjustment and interpersonal sensitivity (agreeableness) and the moving away scales as well as ambition and sociability (extraversion) and moving against that have some higher correlations across the measures compared to within the higher-order composites. However, these values make sense in light of what the scales are actually measuring. For instance, the moving against scales are characterized by people who tend to be outgoing, risk-taking

excitement seekers. In fact, Hogan (2006) asserts that he has yet to see a successful leader that does not have elevated scores on the moving against scales and past research (Judge et al., 2002) supports a positive link between extraversion and leadership.

Additionally, the multivariate analysis regressing the derailing/dark side composites on the FFM traits as a set demonstrated varying degrees of overlap between the traits, but also left variance (9% - 34%) unaccounted for by the FFM composite. It is important to note, again, that the variance left unaccounted for has been corrected to account for the fact that observed scores as opposed to true scores are used in the analysis; thus, the upper bound of variance to be accounted for is set by the reliability of the FFM composite (estimated at .85 for sample 1 and .68 for samples 2 and 3). These findings in combination with results presented by Furham and Crump (2005) at the scale level rather than the composite level, indicate there is overlap (and in some cases nearly complete overlap) between the FFM traits and the derailing/dark side traits. These findings provide some support for the idea that despite the overlap between the derailing/dark side traits and the FFM traits, they are not identical or redundant with one another in all cases, which further supports divergent validity. However, in the cases where there is more substantial overlap, this suggests that perhaps the dark side composites are operating as composites of the FFM traits (see Hough & Ones, 2001).

Another key aspect of research question one focused on the higher-order structure of the derailing/dark side traits and whether that structure could be confirmed in the current research. With respect to the HDS, the test manual (Hogan & Hogan, 1997) asserts that the measure was developed with Horney's Taxonomy in mind and offers these three higher-order factors (composites) of moving away, moving against, and

moving toward. The two-step analysis process with EFA (step 1) and CFA (step 2) provided modest support for this overarching structure. The fit of the model was improved a great deal by allowing two factors to cross-load on two of the latent variables in the model. Although this approach improved the fit of the model, this occurs at the expense of a simpler, more interpretable solution; therefore, I decided to retain the original three-factor solution with only a single loading per scale to latent variable that offered modest fit but was more interpretable. It is worth noting that the combination of EFA and CFA suggests a high probability that the relationships between these scales are potentially more complex than could be represented with the current data (see section on future research for more on this topic). The GPI Test Manual (ePredix, 2001), although it does not directly report analysis of the underlying factor structure, does refer to the derailing traits (as a set) as a “performance factor.” Consistent with this idea, the single-factor model provided good fit and supported the aggregation of these individual scales to a composite.

Research Question Two: Do These Derailing/Dark Side Measures Increment the Predictive Ability of the FFM?

Arguably, the findings for research question two are the most important aspect of the current study. With the exception of the two leadership outcome criteria in sample 3, in the multivariate analysis the derailing/dark side composites were related to leadership outcomes and accounted for significant incremental variance above and beyond the FFM traits as a set. Furthermore, and a key aspect of these findings, the general tendency for the derailing/dark side traits was to be negatively related to the leadership outcomes (negative β values). Specifically, the derailing composite and the moving away

composite were negatively related to all leadership criteria. The implication is clear—higher levels of the derailing composite and moving away composite are related to lower levels of leadership performance and this effect is above and beyond the contribution of the FFM traits. This negative relationship is not a finding that has been reported or even researched in the leadership literature to date. The one exception is Moscoso and Salgado (2004) who reported negative correlations between dark side-like variables and task, contextual, and overall performance. However, the current findings extend these initial results by using multivariate analyses as well as including the FFM traits to assess incremental validity.

Another important contribution of this research concerns the use of assessment center ratings as an outcome measure. Hogan and colleagues (see Hogan & Hogan, 1997; Hogan & Hogan, 2001; Hogan, 2006) have argued that these derailing/dark side traits covary with social skills and impression management. This is important in that these types of skills are quite relevant to performance during two of the most popular selection activities: the interview and the assessment center. The argument is that those higher on these traits are typically quite able and willing to come across as charismatic, charming, socially adept, and just the kind of person the organization needs (see also Babiak, 1995; Babiak & Hare, 2006). However, in the current research, this argument was not supported, in fact, just the opposite was found. The derailing traits significantly incremented the amount of variance accounted for in the leadership performance measures (i.e., assessment center competency ratings) and that relationship was negative. This suggests that even in an assessment center setting, the deleterious effects of derailing traits can be detected.

Four additional comments are in order with respect to the incremental variance hypothesis. First, although the moving against composite did not reach conventional levels of significance (i.e., the 95% CI included zero), the clear trend in the sample 2 results is that this composite tends to be negatively related to leadership outcomes (see Tables 37 – 41). It is possible, perhaps probable, that with additional accumulation of results the future meta-analysis will show this “true” relationship to be negative. Another alternative explanation focuses on the curvilinear relationship between moving against and leadership performance and suggests that the curvilinear nature of the relationship influences the contribution it can make in the multiple linear regression analysis. Second, the results failed to support the a priori prediction that the derailing/dark side traits would account for increments in explained variance for the more interpersonally-based leadership criterion. Given the high correlations between the leadership outcomes (especially in sample 2 where ratings were employed), it is possible that the criterion measures were not distinct enough, or suffered from the influence of halo, such that this relationship could not be identified. However, future research should investigate and further test this claim. Third, interestingly, the moving toward variable was also significant (positively related) in the cases of results and self leadership. The moving toward composite is one that is related to conscientiousness and being a good corporate citizen. At its extreme, it can turn into micro-management and indecisiveness as one’s perfectionism and willingness to please take over; therefore, it is possible that given the nature of this sample (established and generally successful managers in a development program) a scale that distinguishes beyond already high levels of conscientiousness is required. However, this occurred for only 2 of the 5 leadership outcomes and requires

caution when considering the implication of this finding. Fourth, as discussed in several other sections of this discourse, sample 3 failed to support hypotheses 2 – 4. I have discussed at length the problems with the outcome measures in this sample and maintain that based on the scale compression (80-90% of responses for each outcome were given a rating of 3 or 4) in the dependent measure and issues with regression assumptions it would be unwise to interpret this lack of findings as any sort of negation of the robust findings detailed from sample 1 and sample 2.

Research Questions Three and Four: Does Emotional Stability (Adjustment) Operate as a Moderator Between Derailing/Dark Side Traits and Leadership Performance? & Is the Relationship Between Leadership Performance Measures and Derailing/Dark Side Traits Curvilinear?

Research questions three and four were presented in Chapter 2 as exploratory in nature; therefore, no specific a priori hypotheses about the nature of the relationships was outlined beyond the general expectation that: 1) emotional stability/adjustment would moderate the relationship between derailing/dark side traits and leadership performance and 2) the relationship between the derailing/dark side traits would be curvilinear in nature. This section of the discussion explores the implications and contributions of the findings from these two research questions with respect to samples 1 and 2.

With respect to the moderated multiple regression analysis to test the interaction hypothesis, of the four sets of analyses (one each for the derailing composite, moving away, moving against, and moving toward), two were consistently significant—the derailing composite and moving against. Although the effect sizes (i.e., ΔR^2) would not be considered large (Hochwarter, Witt, Treadway, & Ferris, 2006), they are clearly

important and worthy of interpretation. In sample 1, across all leadership outcome criteria, emotional stability did moderate the relationship between the derailing composite and leadership performance. Although the influence of emotional stability does not reverse the negative relationship between the derailing composite and leadership performance, it does lessen the severity of the slope. That is to say that those leaders who are higher on emotional stability experience a less severe decline in leadership performance at higher levels of the derailing traits. In essence, those leaders who are more emotionally stable are able to “cope” with more interpersonal deficiencies without experiencing the same degradation to leadership performance as less stable leaders do. For example, during periods of heavy workload, stress, or crisis when these derailing traits become more problematic, more stable leaders continue to have the resources to be able to keep those the interpersonal dysfunctions in check and under control. The difference could be between a raised voice or sense of urgency and a complete emotional unhinging, replete with screaming, door slamming, and chair throwing.

For sample 2, the prominent interaction occurred between adjustment and the moving against composite and was significant across all leadership outcomes. This interaction had the same general shape as that of the interaction described in sample 1 except that the group of leaders with higher levels of adjustment (+ 1 SD) have a positive slope (as opposed to a negative slope in the sample 1 group) when compared to the group of leaders with lower levels of adjustment (- 1 SD). In this case, the moving against composite requires a slightly different example to describe this interaction. Recall, the moving against factor consists of scales related to high levels of self-confidence, risk taking and testing the limits, being overly expressive, and thinking in creative ways. In

essence, this interaction affords more adjusted leaders the opportunity to behave in ways that result in a slightly positive impact on their rated leadership performance. For example, the very fact that individual leaders are calm and self-accepting (high adjustment) allows them to be able test boundaries, take risks, be overly expressive, and share “wild” ideas without those around them (superiors, peers, and subordinates alike) thinking they have lost their ability to effectively lead. It should be noted that even though higher levels of stability and adjustment slow the rate of decline in leadership performance, the relationship is still negative. All else equal, selecting leaders higher in adjustment would be better, which is consistent with past research as well as by looking at the main effects from step 1 of the moderated multiple regression results in this study (recall that the main effects are group mean centered and can be interpreted as a conditional probability; Aiken & West, 1991; Jaccard & Turrisi, 2003).

A final contribution of this research encompasses the findings with respect to the nature of the relationship between the derailing/dark side traits and the leadership outcomes. Across samples 1 and 2 there was evidence that the relationship between the derailing/dark side traits and leadership performance was, in fact, curvilinear. Similar to the findings with the interaction analysis, the curvilinear analysis identified the derailing composite and the moving against composite as having significant quadratic (curvilinear) trends. In the case of the derailing composite, the curvilinear trend was present in all three leadership performance criteria, but for the moving against composites it was only significant in four of the five leadership performance criteria (not significant for self leadership). Although the effect sizes (ΔR^2) are smaller (ranging from 1% to 1.5%), this finding helps to elucidate an additional aspect of the nature of the relationship between

derailing/dark side traits and leadership performance. Additionally, it provides empirical support for Hogan's (2006) claim that every competent manager he has seen has *some* elevated scores on the four scales that comprise the moving against scale (i.e., bold, mischievous, colorful, and imaginative). In general, the maximum points (i.e., the highest predicted leadership performance scores on the curve as well as the point where increased derailing/dark side scores are associated with lower predicted performance) on these curves occurred near the sample mean, suggesting that the "required" inflation in these traits that are related to increases in predicted leadership performance do not occur, for instance, at the seventy-fifth percentile. At points beyond the mean, the relationship has already reversed and is negative. Whether we think about it anecdotally from our own personal experiences or more scientifically from the research on competencies of managerial effectiveness (Borman & Brush, 1993; Hogan & Warrenfelz, 2003; Yukl, 1999), it is possible to reconcile this relationship. For example, although we would never want to work for someone who was completely narcissistic, it is unlikely that someone who felt no sense of self-confidence, entitlement, or being better than others would ever aspire to a leadership role. Furthermore, the willingness to take risks (calculated compared to outlandish) and think creatively at times are the very things that distinguish leaders from non-leaders and great leaders from mediocre ones. One must be careful not to over interpret this result or take things too far—as can be seen by the curve, the relationship reaches a peak and then declines for the remainder of the derailing/dark side trait level. This decline happens when leaders begin to feel entitled to everything, when they cannot learn from or admit their mistakes, when they exchange calculated risk for recklessness, and when their creativity leads to them being easily distracted. The take

away message is simply that some elevation in these scores is related to better leadership performance ... the key word in the sentence being *some*.

One final point of clarification with respect to the curvilinear relationship reported here. Initially, I posited that an inverted U-shaped function would best describe this relationship; however, it is more accurate to describe the curves as predominantly negative, concave downwards curves. In order to have an inverted U-shaped curve, b_1 must be equal to zero which would signify that there is no linear trend in the data; obviously, this was not the case and the revised description of the curve is most appropriate.

Considering the Additive Model

After the initial analyses had been completed, I decided to pursue a more formal test of the potential for the derailing/dark side traits to be governed by an additive model. The results presented at the high-order composite level indicated that these composite-level variables demonstrated the expected relationships. As a stand-alone piece of evidence, one might conclude tentative support for the additive model. That is to say, the combination of scores across the higher-order factors provides a wider distribution of scores and potentially spreads people out across the continuum and it is those who score more highly across a number of traits, as opposed to an individual trait, that will experience the largest decrements to leadership performance. Again, at best, this would be a tentative claim. The proper way to test the additive model structure was to compare the results from the composite-level analysis to the scale-level analysis. Robust support for an additive model could be claimed if the individual scales did not significantly

predict when entered into the regression equations. Simply, if the composite is significant and the scales are not, that would be support for the additive model.

The reanalysis at the scale level across hypotheses 2 – 4 carries with it a certain amount of risk in that for each outcome variable sample 1 requires 5 regressions and samples 2 – 3 require 11; therefore, a total of 15 additional regressions for sample 1 and 55 regressions for samples 2 and 3 are run for each of the research questions. Given this significant number of regressions, it is clear that the opportunity for the capitalization on chance has to be considered carefully. In light of this caution, the results from the post hoc analysis provided mixed support for the additive model. Generally, the individual scales showed a consistent pattern of significance. For example, passive aggressive was significant at the scale level for all outcomes in the interaction and curvilinear analysis. With sample 2, it was possible to be slightly more precise since there are three higher-order factors. Specifically, the moving away composite was significant in the incremental regression analysis and at the scale level there was some consistency for these scales to be significant, but the leisurely and cautious scales appeared to play an instrumental role. Perhaps the best evidence for the additive model, although tentative, comes from the moving against composite. As I mentioned earlier in this discussion, the moving against composite did include zero in the confidence interval, but the clear trend was toward a negative coefficient. At the scale level, none of the individual scales from this composite reached levels of significance. Although there is some modest support for an additive model, there is also modest support for the argument that certain individual scales might play a more instrumental role in the relationships tested here. Given the

inconclusive nature of the results from this research, additional research (especially at the scale level) is required.

Summary

In total, this research has promising results and represents an attempt to broaden the scope of the study in the leadership domain with the hope that other areas might benefit from considering the implication of these derailing/dark side traits (i.e., job performance, task and contextual performance, counterproductive work behavior, etc.).

In sum, there are four key findings reported here. First, although there is overlap between the FFM traits and the derailing/dark side traits, there is convergent and divergent validity evidence to support the unique nature of this new set of variables. Second, not only do the derailing/dark side traits account for incremental variance across leadership criteria, but also the general tendency is for these traits to be negatively related to leadership.

Third, evidence supporting the role of emotional stability/adjustment as a moderator in the relationship between derailing/dark side traits and leadership performance was found.

Fourth, the relationship between the identified derailing/dark side traits and leadership performance is curvilinear such that increasing scores on the derailing/dark side traits reflect higher predicted leadership performance scores up to a point after which the relationship reverses such that continued increases are associated with lower predicted leadership performance.

Strengths and Limitations of the Study

The current study has a number of strengths and limitations, some of which have been specifically mentioned and many have been alluded to throughout the previous sections and chapters. This section provides a brief summary of these issues.

Strengths. The first major strength is found in the fact that the current sample base is large and it consists of a multi-organizational sample (sample 1), and two specific organization samples (samples 2 and 3). The multi-organization sample not only consists of managers from several organizations, but also a variety of industries, managerial tenure, and experience. Furthermore, the participants in these samples currently occupy managerial/leadership roles in organizations and have specific responsibilities for direct reports. A second strength of this research is the leadership performance measures (with the exception of sample 3). Sample 1 consists of leadership performance measures created from competency ratings made during an assessment center; therefore, these ratings are behaviorally-based, objective ratings of an individual's performance. For sample 2, the leadership performance ratings are based on input from supervisors as well as peers and subordinates. Taken together, these two strengths allow for a level of generalizability that is not always possible in leadership research. A final strength of this research is found in that it adheres to Barrick et al.'s (2001) call for a moratorium on FFM personality-performance studies and embarks on an agenda to further expand our understanding of the personality-performance linkage (see also Judge et al., 2002). In particular, it expands the agenda on both the predictor and criterion sides of the linkage. Specifically, performance is expanded to address leadership and managerial performance and personality is expanded to include the derailing/dark side traits. Although these strengths are important contributions and the results presented here are promising, they should be viewed in light of the following limitations.

Limitations. First, all data from the samples in this study were collected employing a cross-sectional design; therefore, direction of causality cannot be

determined. Second, the data from sample one were collected during an assessment center and clearly all participants were aware of this fact. Further complicating this issue, the specific assessment center was conducted for selection purposes and, again, all participants were aware of the high stakes environment (i.e., a hire/no hire recommendation would be made). The complicating issue with this is that the type of performance that is being assessed in this setting is akin to the typical and maximum performance distinction made by Sackett and colleagues (DuBois, Sackett, Zedeck, & Fogli, 1993; Sackett, Zedeck, and Fogli 1988). To mitigate this issue, the sample was restricted so only managers participating in a “selection” assessment center were included (all development participants were removed); therefore, the type of performance across all participants should be consistent, even if it is more of a maximum performance assessment.

Another area of limitation focuses on the measurement of FFM traits and derailing/dark side traits. First, the GPI arrangement of the higher-order FFM traits (i.e., agreeableness, conscientiousness, emotional stability, extraversion, and openness to experience) show a pattern of intercorrelations that is very different from past research. Specifically, the pattern of intercorrelations for GPI FFM traits is much higher than the FFM trait intercorrelations normally reported for other measures of the big five (see Barrick, Mount, & Gupta, 2003; Barrick, Mount, & Judge, 2001; Barrick, Mount, & Strauss, 1993). One possible reason for this is how some of the facets are loaded to create the higher-order factors. For instance, achievement orientation on the GPI loads with extraversion, but the more common approach conceptualizes this as a facet of conscientiousness (Costa & McCrae, 1992). At the individual scale level, this could lead

to inconsistent findings or conclusions. However, in the current research, with the exception of the interaction hypothesis, the FFM traits were used as a set and based on the consistency of findings with sample 2 this does not seem to be a significant concern for either the case of using the FFM traits as a set or for using emotional stability by itself. Further research that looks specifically at the GPI FFM traits and other more common FFM measures would be quite useful. Also with respect to measurement, is the concern with using self-report measures to tap into the derailing/dark side traits. In response to this concern, I would offer two rebuttal observations. First, the items on these measures are no more invasive or noticeably different from normal measures of the FFM traits (see Tables 13 and 22 for item examples). Second, Hogan & Hogan (2001) report correlations between self ratings and observer (executive coaches) and spouse ratings that are generally supportive.

The final limitation to consider concerns the issue of model misspecification, and, in particular, the issue of a missing variable. For instance, general mental ability (GMA) was not included in this analysis even though research shows this to be the best predictor of performance, in general (Schmidt & Hunter, 1998). One might hypothesize that general mental ability might moderate the entire relationship such that those with higher GMA have more resources available to keep their emotions and reactions “in check,” an argument similar to the supported interaction with emotional stability from the current research. Also, variables that specifically assess social skill or self-monitoring might also help to better understand the specific relationships between derailing/dark side traits and leadership performance (or performance in general). These are all issues that ought to be

investigated as researchers begin to include these derailing/dark side measures in their work.

Directions for Future Research

In light of the promising results in the current research and limitations described above, some areas for future research are highlighted here. First, additional construct validation work with these measures is imperative. Although the current work demonstrates some initial levels of convergent and divergent validity more needs to be done. In particular, it would be useful to look more specifically at convergent and divergent validity estimates within derailing/dark side measures as well as how they compare to perhaps more clinically-based measures. No doubt, some in the field will view these measures as assessments of psychopathy, psychopathology, or personality disorders. Even though this author does not agree with this position, the question is an empirical one and deserves further attention.

All of the leadership performance measures in this study are measured at the individual level of analysis. Hogan and colleagues as well as Kaiser and colleagues have called for a need to link leadership performance to the organizational and/or business unit performance (similar to Huselid, 1995). After all, the goal of leadership is to accomplish the objectives and goals of the organization—more work to develop and use leadership measures at this higher level of analysis should be pursued vigorously. Another important area of research is expanding the samples evaluated to various levels of leadership. The current research focuses on middle-level management, but it is still unclear whether these derailing/dark side traits would be more or less important at higher and lower levels of leadership. Perhaps for a first-time leader/supervisor these dark side

traits might even be more important, perhaps not; again, this is an empirical question that deserves research attention. Furthermore, extending the use of these traits to other types of performance might also yield interesting results. Moscoso and Salgado (2004) provide a first step with respect to task and contextual performance, but more advanced methods need to be employed to truly understand the role of dark side traits in job performance. For instance, in line with arguments made by Motowidlo and colleagues that personality is more related to contextual performance, it seems likely derailing/dark side traits could be more influential with respect to contextual performance than to task performance (see Borman & Motowidlo, 1997; Motowidlo, 2002; Motowidlo, Borman, & Schmit, 1997; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996). Finally, a more robust understanding of the actual processes and mechanisms of how these derailing/dark side traits operate would certainly inform their use in a selection context, but more importantly in a development context. This is not to say that simply being aware that you, as a leader, possess these traits alleviates the deleterious effects; however, self-awareness is a first step.

Conclusion

At the outset of this project, the overall objective was, *“to develop a more robust understanding of the possible predictors in the leadership domain, with a specific emphasis on derailing/dark side traits, and how these predictors can be included to better understand the predictor criterion linkage.”* In reflecting on this objective and the current findings, it seems clear that the objective has been met. As the various research streams in the leadership domain continue to move forward, I hope that this project (and others like it) are able to resurrect the important research on derailment that was

accomplished in the mid 1980s and early 1990s. The continued viability of the leadership research domain hinges on the willingness of researchers and practitioners to broaden our conceptualizations of both the predictor and criterion sides of the domain and then diligently pursue strategies to appropriately match predictors and criteria based on the specific purpose at hand. Indeed, I continue to support the call by Barrick et al. (2001) that we as a field of leadership researchers need an agenda that continues to probe and improve our understanding of the personality-performance linkage. Including derailing/dark side measures in our research is one avenue that will undoubtedly broaden what we know about leadership, provide another tool to researchers and practitioners, and, with any luck, provide a means to lower the base rate of managerial incompetence. Even if the very survival of humanity does not hang in the balance, this is a worthy addition to the research agenda in the domain of leadership studies.

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Appendix A: Tables

Table 1. A summary and chronological tracking of the leadership research paradigms.

Time Period	Paradigm Title & Approach	Core Theme & Direction
Up to 1940	Trait (Great Man Theory)	Leaders are born; leadership skill is an innate ability; leader characteristics are distinct from non-leader characteristics
Late 1940s to late 1960s	Behavioral Approaches/Leadership Style (Consideration and Initiating Structure)	What do leaders do; search for universal behaviors that generate effectiveness
Late 1960s to early 1980s	Contingency Theories (Fiedler's Contingency Theory, Situational Leadership, Normative Decision Making, Path-Goal Theory)	It all depends; influence of behaviorism; person-situation debate; leadership effectiveness is affected by situation/contextual characteristics
Since early 1980s	Neocharismatic (Charismatic, Transformational)	Leaders need vision; need to inspire loyalty; emotionally attach with followers; align values and goals
Mid 1980's forward	Trait resurgence and combination with neocharismatic and other streams	Leverages personality taxonomy (five factor approaches) to identify consistent traits; combines with neocharismatic approaches; attempts to explain the intervening mechanisms and processes

Adapted from Den Hartog & Koopman (2002) and Bryman (1992).

Table 2a. Finkelstein's (2003) Seven Habits of Spectacularly Unsuccessful People.

Trait #	Definition
1	They see themselves and their companies as dominating the environments, not simply responding to developments in those environments.
2	They identify so completely with the company that there is no clear boundary between their personal interests and the company interests.
3	They seem to have all of the answers, often dazzling people with the speed and decisiveness with which they can deal with challenging issues.
4	They make sure that everyone is 100 percent behind them, ruthlessly eliminating anyone who might undermine their efforts.
5	They are consummate company spokespersons, often devoting the largest portion of their efforts to managing and developing the company image.
6	They treat intimidatingly difficult obstacles as temporary impediments to be removed or overcome.
7	They never hesitate to return to the strategies and tactics that made them and their companies successful in the first place.

Table 2b. Zenger and Folkman's (2002) Five Fatal Leadership Flaws.

Fatal Flaw #	Fatal Flaw Name
1	Inability to learn from mistakes.
2	Lack of core interpersonal skills and competencies.
3	Lack of openness to new and different ideas.
4	Lack of accountability.
5	Lack of initiative.

Table 3. DSM-IV-TR, Axis II, Personality Disorders and Definitions (American Psychiatric Association, 2000).

Personality Disorder	Definition
Borderline	Pattern of instability in interpersonal relationships, self-image, and affects, and marked impulsivity.
Paranoid	Pattern of distrust and suspiciousness such that others' motives are interpreted as malevolent.
Avoidant	Pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation.
Schizoid	Pattern of detachment from social relationships and a restricted range of emotional expression.
Passive Aggressive	Pattern of negativistic attitudes and passive resistance to demands for adequate performance in social and occupational situations.
Narcissistic	Pattern of grandiosity, need for admiration, and lack of empathy.
Antisocial	Pattern of disregard for, and violation of, the rights of others.
Histrionic	Pattern of excessive emotionality and attention seeking.
Schizotypal	Pattern of acute discomfort in close relationships, cognitive or perceptual distortions, and eccentricities of behavior.
Obsessive-Compulsive	Pattern of preoccupation with orderliness, perfectionism, and control.
Dependent	Pattern of submissive and clinging behavior related to an excessive need to be taken care of.

Table 4a. Hogan Development Survey's Dark Side Personality Dimensions and Definitions.

HDS Dark Side Trait Name	Definition
Excitable	Mood swings, emotional outbursts, and inability to persist on projects
Skeptical	Mistrusting others, questioning their motives, and challenging their integrity
Cautious	Fearful of making mistakes, avoid making decisions, resisting change, using only proven solutions to problems, and alienating their staffs
Reserved	Remaining aloof, communicating poorly, and ignoring the welfare of their staffs
Leisurely	Procrastinating, pursuing their own agendas, and failing to set clear expectations for, or following through with commitments to, their staffs
Bold	Feeling entitled, not sharing credit for success, blaming their mistakes on others, and not learning from experience, but are fearless about pursuing grand goals
Mischievous	Lying and breaking rules to test the limits, ignoring commitments, and thinking they can talk their way out of any problem
Colorful	Needing to be the center of attention, so that others can admire them, preoccupied with being noticed, unable to maintain focus, and resist sharing credit
Imaginative	Thinking in eccentric ways, often changing their minds, and making strange decisions
Diligent	Frustrating and disempowering their staffs with micro-management, poor prioritization, and an inability to delegate
Dutiful	Sucking up to supervisors, unable to deny unrealistic requests, won't stand up for their staffs and burn them out as a result

Table 4b. Global Personality Inventory “Derailing Leadership Traits”.

GPI Facet Name	Definition
Ego-centered	Measure of the tendency to be self-centered and appear to be egotistical. Characterized by: overly involved with and concerned about one’s well-being and importance; inflated evaluation of personal skills and abilities; appearing condescending to others; attitude of entitlement to position and rewards.
Manipulation	Measure of the tendency to be self-serving and sly. Characterized by: tendency to try to cover up mistakes; ability to protect oneself by shifting blame onto others; carefully sharing information serve one’s own purpose to the detriment of others; willingness to take advantage of others.
Micro-managing	Measure of the tendency to over-manage once a person has moved to higher levels of management. Characterized by: staying involved in too many decisions rather than passing the responsibility; doing detailed work rather than delegating it; staying too involved with direct reports rather than building teamwork among the staff.
Intimidating	Measure of the tendency to use power in a threatening way. Characterized by: acting cold and aloof; an abrasive approach to others, a bullying style; use of knowledge or power to create fear in or subdue others.
Passive Aggressive	Measure of the tendency to avoid confronting others, conveying acceptance or cooperation and yet appearing to behave in uncooperative and self-serving ways. Characterized by: communicating or implying cooperation, conveying acceptance by lack of objection, or expressing support for another person’s idea, but behaving in contradictory ways that serves one’s self-interest and potentially undermines the efforts of others who are possible threats.

Table 5. Summary of HDS Dimensions, DSM-IV Themes, Dotlich & Cairo (2004) Dimensions, and Horney's (1950) Classifications as an Organizing Taxonomy.

Horney's (1950) Classification	HDS Dimensions	DSM-IV Theme	Dotlich & Cairo (2003) Dimensions	GPI Derailing Leadership Dimensions
Moving Away Negative Affect	Excitable	Borderline	Volatile	Intimidating ^a
	Skeptical	Paranoid	Habitual Distrust	
	Cautious	Avoidant	Excessive Caution	Intimidating ^a
Moving Against Positive Affect	Reserved	Schizoid	Aloofness	Passive Aggressive
	Leisurely	Passive- Aggressive	Passive Resistance	
	Bold	Narcissistic	Arrogant	
Moving Toward	Mischievous	Antisocial	Mischievous	Micro- managing
	Colorful	Histrionic	Melodrama	
	Imaginative	Schizotypal	Eccentricity	
Moving Toward	Diligent	Obsessive- Compulsive	Perfectionism	Micro- managing
	Dutiful	Dependent	Eagerness to Please	

Note. ^a The intimidating scale from the GPI is best represented by a combination of these two themes/dimensions.

Table 6. Summary of Managerial/Leadership Effectiveness Taxonomies.

Borman & Brush Managerial Effectiveness Taxonomy	Yukl & Colleagues Managerial Practices Survey	Hogan & Warrenfeltz Domain Model
<u>Useful Personal Behaviors & Skills</u>		<u>Intrapersonal</u>
<ul style="list-style-type: none"> • Persisting to reach goals • Handling crisis and stress • Organizational commitment 		<ul style="list-style-type: none"> • Core self-esteem • Attitudes toward authority • Self-control • Integrity
<u>Interpersonal Dealings & Communication</u>		<u>Interpersonal</u>
<ul style="list-style-type: none"> • Communicating effectively/keeping others informed • Representing the organization to customers/public • Maintaining good working relationships • Selling/Influencing 	<u>Relationship-Oriented</u>	<ul style="list-style-type: none"> • Ability to put oneself in the place of another • “Getting it right” when you anticipate the expectations of another • Incorporating expectations of another into individual behaviors • Staying focused on the other’s expectations
<u>Leadership & Supervision</u>		<u>Leadership</u>
<ul style="list-style-type: none"> • Guiding, directing, and motivating subordinates & providing feedback • Training, coaching, & developing subordinates • Coordinating subordinates & other resources to get the job done 	<ul style="list-style-type: none"> • Consulting • Delegating • Supporting • Developing & mentoring • Recognizing • Secondary loading with some items from Informing and Rewarding 	<ul style="list-style-type: none"> • Recruit & attract talented people • Retaining talented people • Motivating a team • Developing, projecting, & promoting a vision for the team • Persistent & hard to discourage
<u>Technical Activities (“mechanics of management”)</u>	<u>Task-Oriented</u>	<u>Business/Work-Skills^b</u>
<ul style="list-style-type: none"> • Planning & organizing • Technical proficiency • Administration & paperwork • Decision making/problem solving • Staffing • Monitoring & controlling resources • Delegating • Collecting & interpreting data 	<ul style="list-style-type: none"> • Planning & organizing • Clarifying roles & objectives • Monitoring 	<ul style="list-style-type: none"> • Planning • Monitoring budgets • Forecasting costs & revenues • Cutting costs • Mapping strategy • Evaluating performance • Running meetings • Organizing reports
	<u>Change-Oriented^a</u>	
	<ul style="list-style-type: none"> • Problem solving • Motivating & inspiring • Networking 	

^a The lack of change-oriented items offers one explanation for why the scales listed in this table only had some items load on this factor and not a “clean” emergence of the change-oriented factor based on scales (Yukl, 1999).

^b These skills depend on cognitive ability much more so than interpersonal skills and a key rationale for using mental ability in managerial selection, but organizations selecting managers/leaders without reference to interpersonal and leadership factors ignore the human side of the business and do so at their own peril (Hogan & Warrenfeltz, 2003).

Table 7. Demographic Description Data (Sample 1).

Demographic Category	N	Frequency	M	SD	Mdn
Age	1057		41.5	7.12	41.0
Sex	1208				
Male		77%			
Female		23%			
Ethnicity	1064				
Caucasian		91%			
Black		5%			
Hispanic		2%			
Asian		2%			
Other		< 1%			
Education Level	1088				
No HS diploma		0.5%			
HS Grad		9.9%			
Associates Degree		4.0%			
Bachelors Degree		49.4%			
Masters Degree		31.4%			
Doctorate/Professional		4.8%			
Primary Occupation	846				
Manager		79.1%			
Professional/Technical		20.4%			
Other		0.5%			
Managerial Responsibility	1081				
Yes		85.5%			
No		14.5%			
Managerial Tenure ^a	902				
< 1 Year		0.9%			
1 – 3 Years		8.5%			
4 – 5 Years		9.4%			
6 – 10 Years		21.1%			
> 10 Years		60.1%			
Managerial Tenure ^b			13.23	7.42	13.0
# Employees Managed ^b	885		86.8	187.4	18.0
# Direct Reports ^b	589		7.58	6.62	6.0

Note. Due to varying N sizes for each demographic variable, specific N values are listed in the first column of the table.

^a Managerial Tenure measured as a categorical variables (categories listed in the table).

^b Variables measured as a continuous variable (reported by participants).

Table 8. Assessment Center Competency Names and Descriptions.

Competency Name	Brief Description
Analyze Issues	Approaches issues from a broad perspective, considering a wide range of information and factors
Use Sound Judgment	Applies logic and experience to make timely, sound judgments
Think Strategically	Considers a broad range of internal and external factors when solving problems and making decisions
Establish Plans	Develops plans that are appropriately comprehensive, realistic, and effective in meeting goals
Manage Execution	Organizes and prioritizes work activities; monitors progress
Lead Courageously	Steps forward to address difficult issues; stands firm on behalf of the organization
Influence Others	Persuades others, gaining their support and commitment
Coach & Develop Others	Accurately assesses employees' strengths and development needs; provides feedback, coaching, and opportunities to develop
Foster Teamwork	Uses teams and an empowering, collaborative approach on appropriate issues
Champion Change	Challenges the status quo and champions new initiatives; manages implementation effectively
Build Relationships	Initiates and develops relationships with a wide variety of people based on trust; understands others' needs and concerns
Manage Disagreements	Brings substantive conflicts and disagreements into the open and attempts to resolve them collaboratively
Foster Open Communication	Ensures a smooth flow of information between self and others through clear speaking and writing, encouragement of open expression of ideas, and effective listening
Show Drive & Commitment	Sets high personal standards of performance; drives for results and success
Focus on Customer Needs	Anticipates customer needs; takes action to meet customer needs; continually searches for ways to increase customer satisfaction
Demonstrate Adaptability	Demonstrates confidence, maturity, and flexibility in response to work challenges

Table 9. Sample Items for the FFM traits and facets of the GPI.

FFM Trait ^a	Facet ^a	Sample Item
Agreeableness (48)	Consideration (10)	I like to do little things for people to make them feel good.
	Empathy (7)	I take other people's circumstances and feelings into consideration before making a decision.
	Interdependence (8)	I tend to put group goals first and individual goals second.
	Openness (7)	I do not have to share a person's values to work well with that person.
	Thought agility (9)	I think it is vital to consider other perspectives before coming to conclusions.
	Trust (7)	I believe people are usually honest with me.
Conscientiousness (33)	Attention to detail (9)	I like to complete every detail of tasks according to the work plans.
	Dutifulness (8)	I conduct my business according to a strict set of ethical principles.
	Responsibility (7)	I can be relied on to do what is expected of me.
	Work focus (9)	I prioritize my work effectively so the most important things get done first.

Table 9 Continued. Sample Items for the FFM traits and facets of the GPI.

FFM Trait ^a	Facet ^a	Sample Item
Extroversion (86)	Adaptability (8)	For me, change is exciting.
	Competitiveness (8)	I like to win, even if the activity isn't very important.
	Desire for achievement (8)	I prefer to set challenging goals, rather than aim for goals I am more likely to reach.
	Desire for advancement (7)	I would like to attain the highest position in an organization some day.
	Energy level (9)	When most people are exhausted from work, I still have energy to keep going.
	Influence (9)	People come to me for inspiration and direction.
	Initiative (9)	I am always looking for opportunities to start new projects.
	Risk-taking (9)	I am willing to take big risks when there is potential for big returns.
	Sociability (9)	I find it easy to start up a conversation with strangers.
	Taking charge (10)	I actively take control of situations at work if no one is in charge.

Table 9 Continued. Sample Items for the FFM traits and facets of the GPI.

FFM Trait ^a	Facet ^a	Sample Item
Emotional Stability (38)	Emotional control (7)	Even when I am very upset, it is easy for me to control my emotions.
	Negative Affectivity* (7)	I am easily displeased with things at work.
	Optimism (9)	My enthusiasm for living life to its fullest is apparent to those with whom I work.
	Self-confidence (7)	I am confident about my skills and abilities.
	Stress tolerance (8)	I worry about things that I know I should not worry about.
Openness to Experience (41)	Independence (8)	I tend to work on projects alone, even if others volunteer to help me.
	Innovativeness/creativity (9)	I work best in an environment that allows me to be creative and expressive.
	Social astuteness (8)	I know what is expected of me in different social situations.
	Thought focus (7)	I quickly make links between causes and effects.
	Vision (9)	I can often foresee the outcome of a situation before it unfolds.

Note. All ratings for this instrument (GPI) are made using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

^a Number of items per scale/dimension shown in parentheses.

* Indicates reverse-scored scale.

Table 10. Means, standard deviations, and reliabilities of GPI scales and Assessment Center Factors/Outcome Measures for Sample 1.

Trait/Factor Name	M	SD	Reliability ^c
Big Five Personality			
Agreeableness	6.01	0.62	.81
Conscientiousness	6.16	0.72	.77
Emotional Stability	5.76	0.60	.76
Extroversion	6.04	0.72	.89
Openness to Experience	5.43	0.61	.73
Derailing Leadership			
Ego-centered	2.86	0.84	.64
Intimidating	1.74	0.71	.66
Manipulation	3.00	1.10	.79
Micro-managing	1.74	0.67	.69
Passive Aggressive	1.87	0.72	.56
Derailing Composite	2.24	0.58	.74
Assessment Center Outcomes ^a			
Getting Along Factor	3.11	0.29	.81
Getting Ahead Factor	2.99	0.33	.85
Thinking Factor	3.08	0.42	.84
Overall Assessment Center Score ^e	3.06	0.27	.86
Assessment Center Factors ^b			
Thinking Factor	3.09	0.43	.77
Management Factor	2.95	0.38	.69
Leadership Factor	3.00	0.36	.69
Interpersonal Factor	3.04	0.38	.60
Communication Factor	3.03	0.46	-- ^d
Motivation Factor	3.34	0.42	.34
Self-Management Factor	3.32	0.50	-- ^d

Note. N = 1306 – 1330.

^a Empirically created factors.

^b Rationally developed factor model from the assessment center.

^c Reliabilities are internal consistency estimates (alphas) and are conservative, lower-bound estimates for the outcomes and factors.

^d Single-competency factors; therefore, alpha estimates cannot be calculated.

^e Overall AC Score is the overall AC Leadership Score (unit-weighted average of Getting Ahead and Getting Along).

Table 11. Skewness and Kurtosis of GPI scales and Assessment Center Factors/Outcome Measures for Sample 1.

Trait/Factor Name	Skew		Kurtosis	
	Statistic	SE	Statistic	SE
Big Five Personality				
Agreeableness	.26	.07	.17	.14
Conscientiousness	-.05	.07	-.17	.14
Emotional Stability	-.16	.07	.47	.14
Extroversion	.09	.07	.36	.14
Openness to Experience	.16	.07	.37	.14
Derailing Leadership				
Ego-centered	-.02	.07	.08	.14
Intimidating	.32	.07	.11	.14
Manipulation	.18	.07	.11	.14
Micro-managing	.08	.07	.11	.14
Passive Aggressive	.11	.07	.12	.14
Derailing Composite	.03	.07	.01	.14
Assessment Center Outcomes ^a				
Getting Along Factor	-.08	.07	.11	.13
Getting Ahead Factor	-.10	.07	.30	.13
Thinking Factor	-.14	.07	.29	.13
Overall Assessment Center Score ^c	-.09	.07	.37	.13
Assessment Center Factors ^b				
Thinking Factor	-.15	.07	.03	.13
Management Factor	.06	.07	.37	.13
Leadership Factor	-.15	.07	.00	.13
Interpersonal Factor	-.09	.07	.57	.13
Communication Factor	.05	.07	.06	.13
Motivation Factor	.00	.07	.44	.13
Self-Management Factor	-.13	.07	.06	.13

Note. N = 1306 – 1330.

^a Empirically created factors.

^b Rationally developed factor model from the assessment center.

^c Overall AC Score is the overall AC Leadership Score (unit-weighted average of Getting Ahead and Getting Along).

Table 12. SD Ratio and d-value analysis for GPI Trait Scores.

Trait/Factor Name	General Population ^a		Manager Population ^b	
	SD Ratio	d-value	SD Ratio	d-value
Big Five Personality				
Agreeableness	0.80	0.72	0.89	0.23
Conscientiousness	0.85	0.45	0.97	0.41
Emotional Stability	0.74	0.86	0.84	0.16
Extroversion	0.79	1.03	0.92	0.27
Openness to Experience	0.82	0.47	0.98	0.20
Average^c	0.80	0.71	0.92	0.25
Derailing Leadership				
Ego-centered	0.81	-0.21	0.98	-0.08
Intimidating	0.76	-0.62	0.84	-0.18
Manipulation	0.83	-0.48	0.97	-0.22
Micro-managing	0.77	-1.11	0.83	-0.01
Passive Aggressive	0.75	-1.16	0.90	-0.23
Average^c	0.78	0.72	0.90	0.14

Note. N = 1330. Negative d-values indicate lower scores for the sample group compared to the norm group. SD ratio and d-value calculations used the reference group (general population or manager) values in the denominator.

^a General population normative sample based on N = 988 as reported in the test manual.

^b Managerial norm sample based on N = 862 as reported in the test manual.

^c Average d-values are an average of the absolute value of the d-values reported in the table.

Table 13. Sample items for the GPI Derailing Leadership Items

Trait Composite Name ^a	Sample Item
Ego-centered (7)	I have often wondered how others would manage without me.
Intimidating (7)	It is sometimes necessary to criticize others openly and publicly for their poor performance.
Manipulation (10)	People can serve as excellent tools for getting what you want or need.
Micro-managing (7)	Delegation weakens the power of a leader.
Passive Aggressive (7)	There are times I say I will cooperate when I know I will not do it.

Note. All ratings for this instrument (GPI) are made using a 5-point Likert scale ranging from strongly disagree to strongly agree.

^a Number of items per trait/scale shown in parentheses.

Table 14. Rationally Developed Higher-Order Factors and Associated Competencies.

Factor Name	Competency Name
Thinking Factor	Analyze Issues Use Sound Judgment Think Strategically
Management Factor	Establish Plans Manage Execution
Leadership Factor	Lead Courageously Influence Others Coach & Develop Others Foster Teamwork Champion Change
Interpersonal Factor	Build Relationships Manage Disagreements
Communication Factor	Foster Open Communication
Motivation Factor	Show Drive & Commitment Focus on Customer Needs
Self-Management Factor	Demonstrate Adaptability

Table 15. Factor Analytic Results of Assessment Center Competency Ratings.

Competency Name	I	Factor II	III
Champion Change	.67		
Lead Courageously	.67		
Think Strategically	.56		
Influence Others	.51	.51	
Establish Plans	.49		
Show Drive & Commitment	.47		
Demonstrate Adaptability	.45		
Manage Execution	.44		
Focus on Customer Needs	.31		
Build Relationships		.84	
Foster Open Communication		.78	
Foster Teamwork		.63	
Manage Disagreements		.63	
Coach & Develop Others		.58	
Analyze Issues			.88
Use Sound Judgment			.60
Eigenvalue	5.48	2.27	1.12
Percent of Variance	34.26	14.20	6.97

Note. N = 581 (due to listwise deletion); Results based on pairwise deletion yield virtually identical factor loadings and eigenvalues. Factor Analysis conducted via principal axis factoring and varimax rotation methods.

Table 16. Demographic Descriptions for Samples 2 and 3.

Demographic Category	<u>Sample 2</u>		<u>Sample 3</u>	
	N	Frequency	N	Frequency
Sex	258		258	
Male		88.4%		57%
Female		11.6%		43%
Ethnicity	243		258	
Caucasian		84.0%		66.7%
Black		8.6%		12.4%
Hispanic		4.1%		10.8%
Asian		0.8%		8.9%
Other		2.5%		1.2%
Work Location	326			
Domestic		84.9%		
International		15.1%		

Table 17. Scale Definitions for the Hogan Personality Inventory.

Trait	Definition
Adjustment	The degree to which a person appears calm and self-accepting or, conversely, self-critical and tense.
Ambition	The degree to which a person seems socially self-confident, leaderlike, competitive, and energetic.
Sociability	The degree to which a person seems to need and/or enjoy interacting with others.
Interpersonal Sensitivity	The degree to which a person is seen as perceptive, tactful, and socially sensitive.
Prudence	The degree to which a person seems conscientious, conforming, and dependable.
Inquisitiveness	The degree to which a person is perceived as bright, creative, and interested in intellectual matters.
Learning Approach	The degree to which a person seems to enjoy academic activities and to value educational achievement for its own sake.

Table 18. Sample items from the Hogan Personality Inventory.

Dimension ^a	Sample Item
Adjustment (37)	I am seldom tense or anxious.
Ambition (29)	In a group, I like to take charge of things.
Sociability (24)	I would go to a party every night if I could.
Interpersonal Sensitivity (22)	I work well with other people.
Prudence (31)	I do my job as well as I possibly can.
Inquisitiveness (25)	I have taken things apart just to see how they work.
Learning Approach (14)	As a child, school was easy for me.

Note. All ratings for this instrument (HPI) are made by indicating whether the respondent assesses the item as true or false about themselves (2-point scale).

^a Number of items per dimension shown in parentheses.

Table 19. Means, standard deviations, and reliabilities for HPI/HDS scales and Outcome Ratings for Sample 2.

Trait/Factor Name	M	SD	Reliability ^a	α^b	r_{tt}^c
FFM-Like Personality					
Adjustment	30.12	4.90	.83	.89	.86
Ambition	27.48	1.81	.65	.86	.83
Sociability	12.87	4.25	.78	.83	.79
Interpersonal Sensitivity	19.19	2.33	.67	.71	.80
Prudence	22.08	3.90	.65	.78	.74
Inquisitive	14.97	4.20	.76	.78	.83
Learning Approach	8.93	2.78	.76	.75	.86
Dark Side Personality					
Excitable	2.41	2.26	.62	.78	.87
Skeptical	4.09	2.13	.55	.76	.65
Cautious	2.25	1.92	.47	.73	.77
Reserved	3.64	1.93	.47	.66	.59
Leisurely	3.18	1.90	.49	.58	.58
Bold	7.94	2.54	.66	.69	.78
Colorful	5.79	2.26	.52	.59	.72
Mischievous	7.22	2.53	.64	.72	.85
Imaginative	5.15	2.20	.56	.64	.73
Diligent	9.96	1.92	.56	.65	.77
Dutiful	7.27	1.88	.39	.50	.73
Moving Away	3.11	1.30	.64		
Moving Against	6.53	1.76	.72		
Moving Toward	8.61	1.44	.26		
Leadership Ratings					
Business Leadership	4.36	0.34	.87		
People Leadership	4.25	0.35	.89		
Results Leadership	4.35	0.37	.91		
Self-Leadership	4.52	0.30	.90		
Overall Leadership	4.37	0.31	.94		

Note. N = 321 for HPI; N = 326 for HDS; N = 295 for Leadership Ratings.

^a Internal consistency estimates from the current sample.

^b Internal consistency estimates as reported in the test manual.

^c r_{tt} = test – retest reliability as reported in the test manual (4-week interval for the HPI and 3-month interval for the HDS).

Table 20. Skewness/Kurtosis for HPI/HDS Scales and Outcome Ratings for Sample 2.

Trait/Factor Name	Skew		Kurtosis	
	Statistic	SE	Statistic	SE
FFM-Like Personality				
Adjustment	-0.89	0.14	0.43	0.27
Ambition	-2.32	0.14	8.54	0.27
Sociability	0.02	0.14	-0.58	0.27
Interpersonal Sensitivity	-1.73	0.14	4.37	0.27
Prudence	-0.57	0.14	0.16	0.27
Inquisitive	-0.24	0.14	-0.21	0.27
Learning Approach	-0.38	0.14	-0.48	0.27
Dark Side Personality				
Excitable	1.02	0.14	0.50	0.27
Skeptical	0.62	0.14	0.50	0.27
Cautious	1.02	0.14	0.97	0.27
Reserved	0.60	0.14	0.12	0.27
Leisurely	0.69	0.14	0.27	0.27
Bold	-0.36	0.14	-0.29	0.27
Colorful	0.20	0.14	-0.09	0.27
Mischievous	0.10	0.14	-0.19	0.27
Imaginative	0.36	0.14	-0.27	0.27
Diligent	-1.11	0.14	2.01	0.27
Dutiful	-0.25	0.14	-0.18	0.27
Moving Away	0.79	0.14	0.43	0.27
Moving Against	-0.03	0.14	-0.17	0.27
Moving Toward	-0.58	0.14	0.44	0.27
Leadership Ratings				
Business Leadership	-1.00	0.14	2.12	0.28
People Leadership	-0.87	0.14	1.89	0.28
Results Leadership	-1.01	0.14	2.03	0.28
Self-Leadership	-0.83	0.14	1.14	0.28
Overall Leadership	-0.95	0.14	1.97	0.28

Note. N = 321 for HPI; N = 326 for HDS; N = 295 for Leadership Ratings.

Table 21. SD Ratio and d-value analysis for HPI and HDS Trait Scores for Sample 2.

Trait/Factor Name	Normative ^a		Archival ^b	
	SD Ratio	d-value	SD Ratio	d-value
FFM-Like Personality				
Adjustment	0.69	0.50	0.84	0.47
Ambition	0.36	0.77	0.58	0.94
Sociability	0.87	-0.12	0.90	0.00
Interpersonal Sensitivity	0.99	-0.18	0.93	-0.18
Prudence	0.84	0.39	0.87	0.35
Inquisitive	0.86	0.06	0.90	0.07
Learning Approach	0.88	0.08	0.89	0.08
Average^c	0.79	0.30	0.84	0.30
Dark Side Personality				
Excitable	0.79	-0.28	1.07	0.01
Skeptical	0.77	-0.15	0.96	0.28
Cautious	0.74	-0.41	0.98	-0.23
Reserved	0.83	-0.24	1.05	-0.40
Leisurely	0.83	-0.66	1.00	-0.34
Bold	0.93	0.09	0.99	0.24
Colorful	0.87	-0.12	0.97	-0.04
Mischievous	0.86	-0.06	0.95	-0.16
Imaginative	0.87	-0.18	0.94	0.11
Diligent	0.86	0.07	0.91	0.71
Dutiful	0.88	-0.30	0.95	0.04
Average^c	0.84	0.23	0.98	0.23

Note. N = 321 for HPI; N = 326 for HDS. Negative d-values indicate lower scores for the sample group compared to the norm group. SD ratio and d-value calculations used the reference group (general population or archival) values in the denominator.

^a Normative sample values are from the HPI/HDS test manual and are based on 21,573 and 2,071 respectively.

^b Archival values are from a December 2003 Hogan Assessment Systems, Inc. technical manual report and are based on 30,485 and 5,133, respectively. These values are calculated based on percentile scores, as opposed to scale raw scores.

^c Average d-values are an average of the absolute value of the d-values reported in the table.

Table 22. Sample items from the Hogan Development Survey.

Theme	Dimension ^a	Sample Item
Moving Away	Excitable	Some times my life just seems empty.
	Skeptical	The average citizen has no idea what our politicians are up to.
	Cautious	I wish I could be more assertive.
	Reserved	I like spending time by myself.
	Leisurely	I could do a better job if I wasn't interrupted so often.
Moving Against	Bold	If I were in charge, I could get this country moving again.
	Mischievous	Some laws were just made to be broken.
	Colorful	I tend to get bored with details.
	Imaginative	Few people have seen what I have seen.
Moving Toward	Diligent	If I want something done properly I usually have to do it myself.
	Dutiful	I don't mind being told what to do.

Note. All ratings for this instrument (HDS) are made by indicating whether the respondent assesses the item as true or false about themselves (2-point scale).

^a All dimensions of the HDS consist of 14 items.

Table 23. Definitions of Leadership Performance Dimensions for Sample 2.

Leadership Dimension	Definition
Business Leadership	The ability to think through issues, plan, generate innovative ideas, understand financial implications of issues, and consider important business issues from multiple perspectives.
People Leadership	The ability to work well with others, motivate, inspire, build relationships, network, build trust, get work done through others, develop talent, and influence others.
Results Leadership	The ability to take initiative, have a drive for achievement, be willing to take charge, be persistent, communicate clearly, and accomplish results.
Self Leadership	The ability to control one's emotions, act with integrity, take responsibility for own actions, respond resourcefully to change, develop oneself, and perform effectively under stress.

Table 24. Principal Components Analysis for Leadership Performance Dimensions (Sample 2).

Leadership Performance Dimension	<u>Component</u> I
Business	.93
Results	.92
People	.92
Self	.89
Eigenvalue	3.38
Percent of Variance	84.2

Note. N = 290. Principal Components Analysis (no rotation with only one component extracted).

Table 25. Means, standard deviations, and reliabilities for HPI/HDS scales and Outcome Ratings for Sample 3.

Trait/Factor Name	M	SD	Reliability ^a	α^b	r_{tt}^c
FFM-Like Personality					
Adjustment	27.95	5.52	.82	.89	.86
Ambition	26.24	3.01	.75	.86	.83
Sociability	13.73	4.50	.79	.83	.79
Interpersonal Sensitivity	18.76	2.84	.73	.71	.80
Prudence	20.68	3.73	.64	.78	.74
Inquisitive	14.36	4.45	.77	.78	.83
Learning Approach	9.61	2.88	.73	.75	.86
Dark Side Personality					
Excitable	2.69	2.51	.71	.78	.87
Skeptical	4.41	2.38	.65	.76	.65
Cautious	3.22	2.44	.67	.73	.77
Reserved	4.33	2.14	.62	.66	.59
Leisurely	4.77	2.21	.50	.58	.58
Bold	7.75	2.47	.62	.69	.78
Colorful	6.25	2.37	.50	.59	.72
Mischievous	7.98	2.85	.70	.72	.85
Imaginative	5.48	2.37	.63	.64	.73
Diligent	8.89	2.42	.63	.65	.77
Dutiful	7.26	2.12	.51	.50	.73
Moving Away	3.89	1.56	.69		
Moving Against	6.87	1.83	.70		
Moving Toward	8.07	8.07	.38		
Leadership Performance Ratings ^d					
Business Results	3.53	0.79	--		
People Results	3.44	0.69	--		
Overall Results	3.48	0.59	.41		

Note. N = 267 for HPI; N = 263 for HDS; N = 252 for Results Ratings.

^a Internal consistency estimates from the current sample.

^b Internal consistency estimates as reported in the test manual.

^c r_{tt} = test – retest reliability as reported in the test manual. (4-week interval for the HPI and 3-month interval for the HDS)

^d Single-item supervisory ratings for Business and People Results and the Overall Results is an average of the two ratings.

Table 26. Skewness/Kurtosis for HPI/HDS scales and Outcome Ratings for Sample 3.

Trait/Factor Name	Skew		Kurtosis	
	Statistic	SE	Statistic	SE
FFM-Like Personality				
Adjustment	-0.97	0.15	0.76	0.30
Ambition	-1.67	0.15	3.37	0.30
Sociability	-0.24	0.15	-0.41	0.30
Interpersonal Sensitivity	-1.77	0.15	3.96	0.30
Prudence	-0.34	0.15	0.17	0.30
Inquisitive	-0.09	0.15	-0.64	0.30
Learning Approach	-0.53	0.15	-0.17	0.30
Dark Side Personality				
Excitable	1.25	0.15	0.99	0.30
Skeptical	0.84	0.15	0.90	0.30
Cautious	0.73	0.15	-0.14	0.30
Reserved	0.71	0.15	0.44	0.30
Leisurely	0.48	0.15	-0.08	0.30
Bold	-0.22	0.15	0.03	0.30
Colorful	0.24	0.15	-0.27	0.30
Mischievous	0.00	0.15	-0.78	0.30
Imaginative	0.19	0.15	-0.15	0.30
Diligent	-0.49	0.15	-0.20	0.30
Dutiful	0.32	0.15	-0.41	0.30
Moving Away	0.84	0.15	0.32	0.30
Moving Against	0.07	0.15	0.04	0.30
Moving Toward	-0.13	0.15	-0.30	0.30
Leadership Performance Ratings				
Business Results	-0.17	0.15	-0.15	0.31
People Results	-0.10	0.15	0.17	0.31
Overall Results	-0.33	0.15	0.12	0.31

Note. N = 267 for HPI; N = 263 for HDS; N = 252 for Results Ratings.

Table 27. SD Ratio and d-value analysis for HPI and HDS Trait Scores for Sample 3.

Trait/Factor Name	Normative ^a		Archival ^b	
	SD Ratio	d-value	SD Ratio	d-value
FFM-Like Personality				
Adjustment	0.78	0.19	0.86	0.12
Ambition	0.60	0.53	0.82	0.59
Sociability	0.93	0.05	0.93	0.19
Interpersonal Sensitivity	1.20	-0.36	0.98	-0.30
Prudence	0.81	0.09	0.86	0.02
Inquisitive	0.91	-0.07	0.95	-0.06
Learning Approach	0.92	0.30	0.90	0.30
Average^c	0.88	0.23	0.90	0.23
Dark Side Personality				
Excitable	0.88	-0.18	1.03	0.11
Skeptical	0.85	-0.03	0.99	0.39
Cautious	0.94	-0.03	1.05	0.19
Reserved	0.92	0.06	1.01	-0.05
Leisurely	0.96	0.03	1.00	0.44
Bold	0.91	0.02	0.96	0.16
Colorful	0.91	0.06	0.97	0.14
Mischievous	0.97	0.20	1.03	0.09
Imaginative	0.93	-0.05	0.98	0.24
Diligent	1.09	-0.41	1.04	0.21
Dutiful	0.99	-0.30	1.04	0.00
Average^c	0.94	0.12	1.01	0.18

Note. N = 267 for HPI; N = 263 for HDS. Negative d-values indicate lower scores for the sample group compared to the norm group. SD ratio and d-value calculations used the reference group (general population or archival) values in the denominator.

^a Normative sample values are from the HPI/HDS test manual and are based on 21,573 and 2,071 respectively.

^b Archival values are from a December 2003 Hogan Assessment Systems, Inc. technical manual report and are based on 30,485 and 5,133, respectively. These values are calculated based on percentile scores, as opposed to scale raw scores.

^c Average d-values are an average of the absolute value of the d-values reported in the table.

Table 28. Descriptive Statistics and Intercorrelations Between GPI Personality Predictors and Outcome Measures (Sample 1).

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Agreeableness	6.01	0.62	.81														
2. Conscientiousness	6.16	0.72	.49	.77													
3. Emotional Stability	5.76	0.60	.62	.49	.76												
4. Extraversion	6.04	0.72	.51	.47	.63	.89											
5. Openness to Experience	5.43	0.61	.46	.43	.50	.70	.73										
6. Ego-centered	2.86	0.84	-.13	.08	.00	.32	.35	.64 ^a									
7. Intimidating	1.74	0.71	-.37	-.13	-.20	.05	.03	.35	.66 ^a								
8. Manipulation	3.00	1.10	-.34	-.21	-.24	.04	.08	.43	.48	.79 ^a							
9. Micro-managing	1.74	0.67	-.41	-.05	-.36	-.14	.01	.35	.38	.39	.69 ^a						
10. Passive Aggressive	1.87	0.72	-.35	-.25	-.37	-.27	-.11	.20	.29	.49	.38	.56 ^a					
11. Derailing Composite	2.24	0.58	-.44	-.16	-.32	.02	.12	.67	.69	.83	.67	.65	.74 ^b				
12. Getting Ahead Leadership	3.11	0.29	.26	.22	.32	.35	.25	.00	-.12	-.14	-.15	-.18	-.16	.81			
13. Getting Along Leadership	2.99	0.33	.24	.01	.14	.10	.03	-.11	-.26	-.19	-.18	-.14	-.25	.58	.85		
14. Thinking Factor	3.08	0.42	.02	-.11	.04	.03	.09	-.03	-.06	-.06	-.07	-.06	-.08	.55	.44	.84	
15. Overall AC Score ^c	3.07	0.27	.26	.11	.25	.24	.17	-.06	-.19	-.18	-.18	-.18	-.24	.89	.88	.55	.86

Note. N = 1306 for personality intercorrelations and N = 1330 for factor intercorrelations. $r \geq$ an absolute value of 0.05 are significant at the 0.05 level (two-tailed) and $r \geq$ an absolute value of 0.07 are significant at the 0.01 level (two-tailed). Values on the diagonal represent internal consistency reliability estimates.

^a Internal consistency reliability estimates (alpha) and taken from the GPI Technical Manual and Schmit, et al (2000).

^b Factor internal consistency estimates are alpha estimates; thus they are conservative, lower-bound estimates.

^c Overall AC Score is the overall AC Leadership Score (unit-weighted average of Getting Ahead and Getting Along).

Table 29. Descriptive Statistics and Intercorrelations Between Personality Predictors and Assessment Center Factors (Sample 1).

	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Agreeableness	6.01	0.62	.81										
2. Conscientiousness	6.16	0.72	.49	.77									
3. Emotional Stability	5.76	0.60	.62	.49	.76								
4. Extraversion	6.04	0.72	.51	.47	.63	.89							
5. Openness to Experience	5.43	0.61	.46	.43	.50	.70	.73						
6. Ego-centered	2.86	0.84	-.13	.08	.00	.32	.35	.64 ^a					
7. Intimidating	1.74	0.71	-.37	-.13	-.20	.05	.03	.35	.66 ^a				
8. Manipulation	3.00	1.10	-.34	-.21	-.24	.04	.08	.43	.48	.79 ^a			
9. Micro-managing	1.74	0.67	-.41	-.05	-.36	-.14	.01	.35	.38	.39	.69 ^a		
10. Passive Aggressive	1.87	0.72	-.35	-.25	-.37	-.27	-.11	.20	.29	.49	.38	.56 ^a	
11. Derailing Composite	2.24	0.58	-.44	-.16	-.32	.02	.12	.67	.69	.83	.67	.65	.74 ^b
12. Thinking Factor	3.09	.43	.05	-.09	.06	.05	.12	-.04	-.06	-.05	-.07	-.06	-.08
13. Management Factor	2.95	.38	.11	.18	.07	.11	.08	-.02	-.06	-.09	-.03	-.07	-.08
14. Leadership Factor	3.00	.36	.24	.09	.19	.22	.13	-.05	-.21	-.19	-.17	-.15	-.21
15. Interpersonal Factor	3.04	.38	.20	.04	.14	.11	.03	-.09	-.21	-.16	-.15	-.18	-.22
16. Communication Factor	3.03	.46	.08	-.09	.03	.00	-.01	-.06	-.14	-.07	-.06	-.03	-.10
17. Motivation Factor	3.34	0.42	.30	.37	.36	.49	.36	.13	-.08	-.08	-.09	-.19	-.08
18. Self-Management Factor	3.32	0.50	.20	.06	.41	.16	.07	-.10	-.10	-.14	-.18	-.16	-.19

Table 29 Continued.

	12	13	14	15	16	17	18
1. Agreeableness							
2. Conscientiousness							
3. Emotional Stability							
4. Extraversion							
5. Openness to Experience							
6. Ego-centered							
7. Intimidating							
8. Manipulation							
9. Micro-managing							
10. Passive Aggressive							
11. Derailing Composite							
12. Thinking Factor	.77 ^b						
13. Management Factor	.45	.69 ^b					
14. Leadership Factor	.48	.49	.69 ^b				
15. Interpersonal Factor	.27	.29	.54	.60 ^b			
16. Communication Factor	.35	.31	.50	.63	-- ^c		
17. Motivation Factor	.24	.41	.40	.27	.15	.34 ^b	
18. Self-Management Factor	.24	.20	.34	.31	.23	.26	-- ^c

Note. N = 1306 for personality intercorrelations and N = 1328 for factor intercorrelations. $r \geq$ an absolute value of 0.05 are significant at the 0.05 level (two-tailed) and $r \geq$ an absolute value of 0.07 are significant at the 0.01 level (two-tailed). Values on the diagonal represent internal consistency reliability estimates.

^a Internal consistency reliability estimates (alpha) and taken from the GPI Technical Manual and Schmit, et al (2000).

^b Factor internal consistency estimates are alpha estimates; thus they are conservative, lower-bound estimates.

^c These factors are composed of single competencies; therefore, internal consistency estimates cannot be calculated.

Table 30. Intercorrelations Between HPI and HDS Traits^a (Archival Sample).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Adjustment	--																	
2. Ambition	.44	--																
3. Sociability	.05	.38	--															
4. Interpersonal Sensitivity	.44	.29	.26	--														
5. Prudence	.46	.13	-.21	.32	--													
6. Inquisitive	.17	.28	.41	.16	-.02	--												
7. School Success	.22	.28	.18	.13	.12	.36	--											
8. Excitable	-.70	-.43	-.12	-.43	-.39	-.18	-.21	--										
9. Skeptical	-.41	-.11	.05	-.30	-.33	-.01	-.07	.35	--									
10. Cautious	-.50	-.66	-.33	-.31	-.15	-.27	-.26	.49	.19	--								
11. Reserved	-.31	-.35	-.33	-.54	-.26	-.14	-.13	.35	.27	.37	--							
12. Leisurely	-.29	-.23	-.03	-.17	-.19	-.04	-.05	.25	.32	.33	.23	--						
13. Bold	-.02	.29	.32	.03	-.04	.24	.21	-.05	.32	-.19	-.06	.17	--					
14. Mischievous	-.09	.20	.45	-.03	-.40	.33	.07	.03	.33	-.17	.01	.15	.42	--				
15. Colorful	.04	.45	.62	.19	-.16	.28	.19	-.11	.08	-.35	-.28	.00	.46	.46	--			
16. Imaginative	-.22	.09	.38	-.04	-.36	.30	.08	.12	.28	-.03	.04	.16	.35	.45	.36	--		
17. Diligent	-.01	.04	-.03	.08	.31	.09	.07	-.01	.13	.02	-.04	.10	.18	-.06	-.07	.00	--	
18. Dutiful	-.03	-.18	-.03	.22	.21	-.01	-.07	.02	-.06	.21	-.11	.07	-.09	-.17	-.11	-.07	.21	--

Note. N = 16528.

$r \geq$ an absolute value of 0.015 are significant at the 0.05 level (two-tailed) and $r \geq$ an absolute value of 0.020 are significant at the 0.01 level (two-tailed).

^a These results are based on an unpublished, archival database from Hogan Assessment Systems.

Table 31. Descriptive Statistics and Intercorrelations Between HPI and HDS Traits (Sample 2).

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Adjustment	30.12	4.9	--														
2. Ambition	27.48	1.81	.37	--													
3. Sociability	12.87	4.25	.04	.36	--												
4. Interpersonal Sensitivity	19.19	2.33	.45	.36	.23	--											
5. Prudence	22.08	3.9	.46	.24	-.12	.37	--										
6. Inquisitive	14.97	4.2	.20	.24	.33	.17	.10	--									
7. School Success	8.93	2.78	.20	.27	.19	.25	.13	.41	--								
8. Excitable	2.41	2.26	-.63	-.30	-.05	-.38	-.38	-.17	-.23	--							
9. Skeptical	4.09	2.13	-.35	-.07	.10	-.16	-.36	.00	-.04	.31	--						
10. Cautious	2.25	1.92	-.55	-.47	-.22	-.30	-.16	-.21	-.26	.37	.16	--					
11. Reserved	3.64	1.93	-.32	-.33	-.26	-.49	-.25	-.10	-.17	.32	.25	.38	--				
12. Leisurely	3.18	1.9	-.22	-.18	-.03	-.15	-.17	-.05	-.04	.19	.24	.30	.14	--			
13. Bold	7.94	2.54	-.06	.15	.21	-.05	-.09	.14	.17	.14	.43	-.06	.09	.24	--		
14. Mischievous	5.79	2.26	-.20	.08	.29	-.15	-.36	.19	.05	.15	.38	.01	.06	.23	.40	--	
15. Colorful	7.22	2.53	.07	.29	.48	.12	-.07	.20	.25	-.04	.18	-.23	-.16	.13	.48	.40	--
16. Imaginative	5.15	2.2	-.19	.09	.32	-.02	-.22	.18	.08	.15	.30	.02	.08	.14	.38	.36	.34
17. Diligent	9.96	1.92	-.07	.05	.04	.05	.27	.11	.16	.08	.04	.07	-.04	.17	.13	-.03	.04
18. Dutiful	7.27	1.88	-.03	.02	.07	.22	.19	.06	.08	-.01	-.12	.20	-.14	-.01	-.04	-.09	.07
19. Moving Away	3.11	1.30	-.65	-.41	-.13	-.46	-.42	-.17	-.23	.71	.62	.67	.64	.57	.27	.26	-.03
20. Moving Against	6.53	1.76	-.12	.21	.44	-.03	-.24	.24	.19	.13	.44	-.09	.02	.25	.78	.72	.76
21. Moving Toward	8.61	1.44	-.07	.05	.07	.18	.30	.12	.16	.04	-.06	.18	-.12	.11	.06	-.08	.07
22. Business Leadership	4.36	0.34	.25	.21	-.08	.09	.16	.07	.11	-.18	-.17	-.24	-.06	-.18	-.09	-.14	-.05
23. People Leadership	4.25	0.35	.25	.18	-.05	.16	.15	-.02	.08	-.20	-.20	-.21	-.10	-.18	-.08	-.16	-.02
24. Results Leadership	4.35	0.37	.24	.18	-.08	.08	.15	.05	.14	-.21	-.21	-.22	-.05	-.19	-.08	-.15	-.01
25. Self Leadership	4.52	0.3	.26	.18	-.12	.12	.16	-.02	.07	-.22	-.23	-.16	-.08	-.21	-.12	-.18	-.02
26. Overall Leadership	4.37	0.31	.27	.21	-.09	.12	.17	.02	.11	-.22	-.22	-.23	-.08	-.21	-.10	-.17	-.03

Table 31 Continued.

	16	17	18	19	20	21	22	23	24	25	26
1. Adjustment											
2. Ambition											
3. Sociability											
4. Interpersonal Sensitivity											
5. Prudence											
6. Inquisitive											
7. School Success											
8. Excitable											
9. Skeptical											
10. Cautious											
11. Reserved											
12. Leisurely											
13. Bold											
14. Mischievous											
15. Colorful											
16. Imaginative	--										
17. Diligent	-.01	--									
18. Dutiful	.07	.15	--								
19. Moving Away	.22	.10	-.03	--							
20. Moving Against	.69	.05	.01	.24	--						
21. Moving Toward	.04	.76	.75	.04	.04	--					
22. Business Leadership	-.16	.11	-.02	-.27	-.14	.06	--				
23. People Leadership	-.13	.04	.03	-.29	-.13	.04	.81	--			
24. Results Leadership	-.15	.12	.04	-.28	-.13	.10	.85	.78	--		
25. Self Leadership	-.12	.04	.06	-.29	-.15	.06	.76	.80	.74	--	
26. Overall Leadership	-.16	.09	.03	-.31	-.15	.08	.93	.92	.93	.89	--

Note. N = 290 – 326. $r \geq$ an absolute value of 0.11 are significant at the 0.05 level (two-tailed) and $r \geq$ an absolute value of 0.14 are significant at the 0.01 level (two-tailed).

Table 32. Descriptive Statistics and Intercorrelations Between HPI and HDS Traits (Sample 3).

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Adjustment	27.95	5.52	--																	
2. Ambition	26.24	3.01	.41	--																
3. Sociability	13.73	4.50	.12	.39	--															
4. Interpersonal Sensitivity	18.76	2.84	.43	.30	.31	--														
5. Prudence	20.68	3.73	.20	.03	-.16	.28	--													
6. Inquisitive	14.36	4.45	.18	.17	.20	.00	-.16	--												
7. School Success	9.61	2.88	.11	.16	.16	.09	.06	.24	--											
8. Excitable	2.69	2.51	-.71	-.51	-.15	-.39	-.23	-.18	-.16	--										
9. Skeptical	4.41	2.38	-.34	-.10	.02	-.29	-.19	-.05	.00	.33	--									
10. Cautious	3.22	2.44	-.45	-.66	-.35	-.29	.03	-.27	-.25	.48	.16	--								
11. Reserved	4.33	2.14	-.26	-.38	-.42	-.57	-.09	.02	-.12	.29	.17	.38	--							
12. Leisurely	4.77	2.21	-.30	-.26	-.05	-.16	-.07	-.08	-.03	.26	.40	.34	.25	--						
13. Bold	7.75	2.47	.03	.21	.28	.08	-.06	.02	.11	-.04	.38	-.14	-.09	.25	--					
14. Mischievous	6.25	2.37	.14	.28	.37	.06	-.22	.32	.11	-.12	.23	-.29	-.11	.08	.35	--				
15. Colorful	7.98	2.85	.04	.43	.59	.23	-.17	.10	.13	-.09	.11	-.29	-.36	.06	.43	.42	--			
16. Imaginative	5.48	2.37	-.06	.13	.24	-.09	-.30	.30	.11	.05	.25	-.17	.05	.17	.34	.39	.27	--		
17. Diligent	8.89	2.42	-.10	-.07	-.02	.01	.37	.00	-.01	.07	.08	.11	.02	.20	.05	-.04	-.11	-.02	--	
18. Dutiful	7.26	2.12	-.04	-.13	.11	.17	.24	-.08	.04	.02	.04	.21	-.01	.10	.03	-.10	.03	-.10	.23	--
19. Moving Away	3.89	1.56	-.63	-.58	-.28	-.51	-.17	-.18	-.17	.72	.62	.72	.61	.66	.11	-.07	-.17	.10	.14	.11
20. Moving Against	6.87	1.83	.05	.37	.52	.11	-.26	.25	.16	-.07	.33	-.31	-.19	.19	.73	.73	.76	.67	-.04	-.04
21. Moving Toward	8.07	1.79	-.09	-.12	.05	.11	.39	-.05	.02	.06	.08	.20	.00	.19	.05	-.09	-.05	-.07	.82	.75
22. Business Results	3.53	0.79	.07	.01	.06	.09	.03	-.05	.00	-.14	-.02	-.01	-.08	-.07	-.04	.01	.04	-.13	-.03	-.02
23. People Results	3.44	0.69	.06	.05	.16	.11	-.08	-.03	.15	.01	-.04	-.10	-.17	-.13	.02	.10	.10	-.19	-.17	-.01
24. Overall Results	3.48	0.59	.08	.03	.13	.12	-.02	-.05	.09	-.09	-.04	-.06	-.15	-.12	-.02	.07	.09	-.20	-.12	-.02

Table 32 Continued.

	19	20	21	22	23	24
1. Adjustment						
2. Ambition						
3. Sociability						
4. Interpersonal Sensitivity						
5. Prudence						
6. Inquisitive						
7. School Success						
8. Excitable						
9. Skeptical						
10. Cautious						
11. Reserved						
12. Leisurely						
13. Bold						
14. Mischievous						
15. Colorful						
16. Imaginative						
17. Diligent						
18. Dutiful						
19. Moving Away	--					
20. Moving Against	-.02	--				
21. Moving Toward	.16	-.06	--			
22. Business Results	-.09	-.13	-.13	--		
23. People Results	-.03	.02	-.01	.26	--	
24. Overall Results	-.03	-.12	-.09	.82	.76	--

Note. N = 220 – 263.

$r \geq$ an absolute value of 0.13 are significant at the 0.05 level (two-tailed) and $r \geq$ an absolute value of 0.17 are significant at the 0.01 level (two-tailed).

Table 33a. Exploratory Factor Analysis Results of HDS Scales (Archival Sample).

Scale Name	<u>Factor</u>		
	I	II	III
Excitable	.67	.07	-.03
Skeptical	.45	.42	.17
Cautious	.70	-.24	.06
Reserved	.58	.00	-.11
Leisurely	.43	.19	.19
Bold	-.10	.61	.31
Mischievous	.05	.74	-.08
Colorful	-.29	.64	-.02
Imaginative	.13	.58	.00
Diligent	-.05	-.10	.62
Dutiful	.02	-.25	.34

Note. N = 16,528. RMSEA = 0.085; ECVI = .19. Factor Analysis conducted using CEFA 2.0 (Browne, et al., 2002). All loading shown for completeness. Factor I = Moving Away; Factor II = Moving Against; Factor III = Moving Toward.

Table 33b. Exploratory Factor Analysis Results of HDS Scales (Archival Sample).

Scale Name	<u>Factor</u>			
	I	II	III	IV
Excitable	.36	.34	-.10	.00
Skeptical	.07	.67	.04	.05
Cautious	.96	-.02	.02	.00
Reserved	.28	.38	-.30	-.16
Leisurely	.37	.31	.16	.06
Bold	-.10	.45	.38	.16
Mischievous	-.08	.36	.40	-.11
Colorful	-.01	-.01	.83	-.03
Imaginative	-.06	.38	.28	-.05
Diligent	-.04	.09	-.14	.62
Dutiful	.28	-.24	.18	.33

Note. N = 16,528. RMSEA = 0.043; ECVI = .23. Factor Analysis conducted using CEFA 2.0 (Browne, et al., 2002). All loading shown for completeness.

Table 34. Hierarchical Regression Analysis Results (Overall Leadership as Outcome, Sample 1).

	b	SE b	95% CI		β	b	SE b	95% CI		β	b	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Agreeableness	.09	.02	.06	.12	.20**						.04	.02	.01	.08	.10**
Conscientiousness	-.02	.01	-.04	.01	-.05						-.02	.01	-.04	.00	-.05
Emotional Stability	.05	.02	.01	.08	.11**						.02	.02	-.01	.06	.05
Extraversion	.06	.02	.03	.09	.17**						.08	.02	.05	.11	.22**
Openness to Experience	-.04	.02	-.07	-.01	-.09**						-.01	.02	-.05	.02	-.03
Derailing Composite						-.11	.01	-.13	-.09	-.24**	-.09	.02	-.12	-.06	-.19**
Multiple R	.33**					.24**					.36**				
R ²	.11**					.06**					.13**				
ΔR^2											.02**				
Adjusted R	.33					.25					.36				
Adjusted R ²	.11					.06					.13				

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

† p < .10, * p < 0.05, ** p < 0.01

Table 35. Hierarchical Regression Analysis Results (Getting Ahead as Outcome, Sample 1).

	b	SE b	95% CI		β	b	SE b	95% CI		β	b	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Agreeableness	.02	.02	-.01	.06	.05						-.01	.02	-.05	.02	-.03
Conscientiousness	.01	.01	-.01	.04	.03						.01	.01	-.01	.04	.03
Emotional Stability	.06	.02	.03	.10	.13**						.04	.02	.00	.08	.08*
Extraversion	.10	.02	.07	.13	.24**						.12	.02	.08	.15	.29**
Openness to Experience	-.01	.02	-.04	.02	-.02						.02	.02	-.02	.05	.03
Derailing Composite						-.08	.01	-.11	-.06	-.16**	-.08	.02	-.11	-.05	-.15**
Multiple R	.38**					.16**					.40**				
R ²	.14**					.03**					.16**				
ΔR^2											.02**				
Adjusted R	.37					.17					.39				
Adjusted R ²	.14					.03					.15				

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

† p < .10, * p < 0.05, ** p < 0.01

Table 36. Hierarchical Regression Analysis Results (Getting Along as Outcome, Sample 1).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Agreeableness	.17	.02	.13	.21	.31**						.12	.02	.08	.16	.22**
Conscientiousness	-.06	.01	-.09	-.03	-.14**						-.07	.01	-.09	-.04	-.14**
Emotional Stability	.02	.02	-.02	.06	.03						-.01	.02	-.05	.03	-.02
Extraversion	.03	.02	-.01	.07	.07 [†]						.05	.02	.01	.09	.12**
Openness to Experience	-.07	.02	-.11	-.02	-.12**						-.03	.02	-.07	.01	-.06
Derailing Composite						-.14	.02	-.17	-.11	-.25**	-.10	.02	-.14	-.06	-.18**
Multiple R	.29**					.25**					.32**				
R ²	.08**					.06**					.10**				
ΔR^2											.02**				
Adjusted R	.28					.25					.32				
Adjusted R ²	.08					.06					.10				

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 37. Hierarchical Regression Analysis Results (Overall Leadership as Outcome, Sample 2).

	b	SE b	95% CI		β	b	SE b	95% CI		β	B	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Adjustment	.01	.00	.00	.02	.21**						.01	.01	.00	.02	.14 [†]
Ambition	.03	.01	.01	.06	.18**						.03	.01	.01	.06	.17**
Sociability	-.01	.00	-.02	.00	-.16*						-.01	.01	-.02	.00	-.16*
Interpersonal															
Sensitivity	.00	.01	-.02	.02	.00						-.01	.01	-.03	.01	-.06
Prudence	.00	.01	-.01	.01	-.01						-.01	.01	-.02	.00	-.11
Inquisitive	.00	.00	-.01	.01	-.03						.00	.00	-.01	.01	-.02
Learning Approach	.01	.01	-.01	.02	.08						.01	.01	-.01	.02	.05
Moving Away						-.07	.01	-.10	-.05	-.30**	-.06	.02	-.10	-.02	-.24**
Moving Against						-.01	.01	-.03	.01	-.07	-.01	.01	-.04	.01	-.07
Moving Toward						.02	.01	.00	.04	.10 [†]	.03	.01	.00	.06	.14*
Multiple R	.34**					.34**					.40**				
R ²	.11**					.11**					.16**				
ΔR^2											.05**				
Adjusted R	.30					.32					.36				
Adjusted R ²	.09					.10					.13				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 38. Hierarchical Regression Analysis Results (Business Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Adjustment	.01	.00	.00	.02	.18**						.01	.01	.00	.02	.13
Ambition	.04	.01	.01	.07	.20**						.04	.01	.02	.07	.21**
Sociability	-.01	.01	-.02	.00	-.17*						-.01	.01	-.02	.00	-.16*
Interpersonal															
Sensitivity	.00	.01	-.02	.02	-.03						-.01	.01	-.03	.01	-.08
Prudence	.00	.01	-.01	.01	-.01						-.01	.01	-.02	.00	-.10
Inquisitive	.00	.01	-.01	.01	.03						.00	.01	-.01	.01	.04
Learning Approach	.01	.01	-.01	.02	.06						.00	.01	-.01	.02	.04
Moving Away						-.07	.02	-.10	-.04	-.26**	-.05	.02	-.09	-.01	-.18*
Moving Against						-.02	.01	-.04	.01	-.08	-.02	.01	-.04	.01	-.10
Moving Toward						.02	.01	-.01	.05	.08	.03	.01	.00	.06	.12 [†]
Multiple R	.33**					.30**					.38**				
R ²	.11**					.09**					.15**				
ΔR^2											.04**				
Adjusted R	.30					.28					.35				
Adjusted R ²	.09					.08					.12				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 39. Hierarchical Regression Analysis Results (Results Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Adjustment	.01	.01	.00	.03	.19**						.01	.01	.00	.02	.13
Ambition	.03	.02	.00	.06	.15*						.03	.02	.00	.06	.14*
Sociability	-.01	.01	-.02	.00	-.14*						-.01	.01	-.02	.00	-.15*
Interpersonal															
Sensitivity	-.01	.01	-.03	.01	-.05						-.02	.01	-.04	.00	-.11 [†]
Prudence	.00	.01	-.01	.01	.00						-.01	.01	-.02	.00	-.11
Inquisitive	.00	.01	-.01	.01	-.02						.00	.01	-.01	.01	-.01
Learning Approach	.02	.01	.00	.03	.12 [†]						.01	.01	.00	.03	.09
Moving Away						-.08	.02	-.12	-.05	-.28**	-.07	.02	-.12	-.03	-.25**
Moving Against						-.01	.01	-.03	.01	-.05	-.01	.01	-.04	.02	-.05
Moving Toward						.03	.01	.00	.06	.13*	.04	.02	.01	.08	.18**
Multiple R	.31**					.32**					.39**				
R ²	.10					.10**					.15**				
ΔR^2											.05**				
Adjusted R	.28					.30					.35				
Adjusted R ²	.08					.09					.12				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 40. Hierarchical Regression Analysis Results (People Leadership as Outcome, Sample 2).

	b	SE b	95% CI		β	b	SE b	95% CI		β	B	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Adjustment	.01	.01	.00	.02	.20**						.01	.01	.00	.02	.12
Ambition	.03	.01	.00	.06	.14*						.03	.01	.00	.06	.13 [†]
Sociability	-.01	.01	-.02	.00	-.10						-.01	.01	-.02	.00	-.10
Interpersonal															
Sensitivity	.01	.01	-.01	.03	.05						.00	.01	-.02	.02	.01
Prudence	.00	.01	-.01	.01	-.02						-.01	.01	-.02	.01	-.09
Inquisitive	-.01	.01	-.02	.00	-.08						-.01	.01	-.02	.00	-.07
Learning Approach	.01	.01	-.01	.02	.05						.00	.01	-.01	.02	.04
Moving Away						-.08	.02	-.11	-.05	-.28**	-.06	.02	-.10	-.01	-.20*
Moving Against						-.01	.01	-.03	.01	-.06	-.01	.01	-.04	.02	-.06
Moving Toward						.01	.01	-.01	.04	.06	.02	.02	-.01	.05	.09
Multiple R	.30**					.30**					.35**				
R ²	.09**					.09**					.12**				
ΔR^2											.03*				
Adjusted R	.26					.28					.30				
Adjusted R ²	.07					.08					.09				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 41. Hierarchical Regression Analysis Results (Self Leadership as Outcome, Sample 2).

	b	SE b	95% CI		β	b	SE b	95% CI		β	B	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Adjustment	.01	.00	.00	.02	.21**						.01	.00	.00	.02	.14 [†]
Ambition	.03	.01	.01	.05	.17*						.03	.01	.00	.05	.16*
Sociability	-.01	.00	-.02	.00	-.18**						-.01	.00	-.02	.00	-.19**
Interpersonal															
Sensitivity	.00	.01	-.01	.02	.02						.00	.01	-.02	.01	-.03
Prudence	.00	.01	-.01	.01	-.02						-.01	.01	-.02	.00	-.11
Inquisitive	.00	.00	-.01	.01	-.05						.00	.00	-.01	.01	-.05
Learning Approach	.00	.01	-.01	.02	.04						.00	.01	-.01	.01	.01
Moving Away						-.07	.01	-.09	-.04	-.28**	-.06	.02	-.09	-.02	-.23**
Moving Against						-.01	.01	-.03	.01	-.08	-.01	.01	-.03	.02	-.04
Moving Toward						.02	.01	-.01	.04	.08	.03	.01	.00	.05	.14*
Multiple R	.33**					.32**					.39**				
R ²	.11**					.10**					.15**				
ΔR^2											.04**				
Adjusted R	.30					.30					.35				
Adjusted R ²	.09					.09					.12				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 42. Hierarchical Regression Analysis Results (Business Results Leadership as Outcome, Sample 3).

	b	SE b	95% CI		β	b	SE b	95% CI		β	B	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Adjustment	.01	.01	-.01	.03	.07						.01	.01	-.02	.03	.04
Ambition	-.01	.02	-.06	.03	-.05						-.02	.03	-.07	.03	-.07
Sociability	.01	.01	-.02	.04	.07						.02	.02	-.02	.05	.09
Interpersonal															
Sensitivity	.01	.02	-.03	.06	.05						.01	.03	-.04	.06	.03
Prudence	.00	.02	-.03	.03	.00						.00	.02	-.04	.04	.00
Inquisitive	-.01	.01	-.04	.01	-.06						-.01	.01	-.04	.02	-.06
Learning Approach	.00	.02	-.04	.04	.00						.00	.02	-.04	.04	-.01
Moving Away						-.04	.03	-.11	.02	-.09	-.04	.06	-.15	.08	-.07
Moving Against						-.02	.03	-.07	.04	-.04	-.02	.04	-.10	.06	-.04
Moving Toward						-.01	.03	-.07	.05	-.02	-.01	.04	-.08	.06	-.03
Multiple R	.13					.10					.15				
R ²	.02					.01					.02				
ΔR^2											.01				
Adjusted R	.00					.00					.00				
Adjusted R ²	.00 ^a					.00 ^a					.00 ^a				

Note. N = 220. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 43. Hierarchical Regression Analysis Results (People Results Leadership as Outcome, Sample 3).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Adjustment	.01	.01	-.01	.03	.07						.00	.01	-.02	.02	.02
Ambition	-.01	.02	-.05	.02	-.06						-.01	.02	-.06	.03	-.07
Sociability	.02	.01	.00	.04	.14 [†]						.03	.01	.00	.05	.19*
Interpersonal															
Sensitivity	.02	.02	-.02	.06	.06						.01	.02	-.03	.05	.05
Prudence	-.02	.01	-.05	.00	-.12						-.02	.02	-.05	.01	-.09
Inquisitive	-.02	.01	-.04	.00	-.12						-.02	.01	-.04	.01	-.11
Learning Approach	.04	.02	.01	.07	.16*						.04	.02	.01	.07	.16*
Moving Away						-.05	.03	-.11	.01	-.11	-.03	.05	-.12	.07	-.06
Moving Against						.00	.02	-.05	.05	.01	-.03	.03	-.10	.03	-.09
Moving Toward						-.04	.03	-.09	.01	-.11	-.04	.03	-.10	.02	-.11
Multiple R	.26*					.16					.30*				
R ²	.07*					.03					.09*				
ΔR^2											.02				
Adjusted R	.20					.10					.22				
Adjusted R ²	.04					.01					.05				

Note. N = 220. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 44. Hierarchical Regression Analysis Results: Emotional Stability as a Moderator (Overall Leadership as Outcome, Composite Level, Sample 1).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Derailing Composite							
Step 1							
Emotional Stability	.10	.01	.07	.12	.22**		
Derailing Composite	-.08	.01	-.11	-.06	-.17**	.10**	71.21**
Step 2							
Emotional Stability x Derailing Composite	.05	.02	.01	.08	.07**	.009**	6.81**

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized coefficient column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] $p < .10$, * $p < .05$, ** $p < .01$

Table 45. Hierarchical Regression Analysis Results: Emotional Stability as a Moderator (Getting Ahead Leadership as Outcome, Composite Level, Sample 1).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Derailing Composite							
Step 1							
Emotional Stability	.15	.01	.12	.17	.30**		
Derailing Composite	-.04	.01	-.06	-.01	-.07**	.11**	78.52**
Step 2							
Emotional Stability x Derailing Composite	.04	.02	.00	.08	.05*	.003*	4.22*

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized coefficient column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] $p < .10$, * $p < .05$, ** $p < .01$

Table 46. Hierarchical Regression Analysis Results: Emotional Stability as a Moderator (Getting Along Leadership as Outcome, Composite Level, Sample 1).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Derailing Composite							
Step 1							
Emotional Stability	.04	.02	.01	.07	.07*		
Derailing Composite	-.13	.02	-.16	-.10	-.23**	.07**	45.17**
Step 2							
Emotional Stability x Derailing Composite	.05	.02	.01	.10	.06*	.004*	5.49**

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized coefficient column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] $p < .10$, * $p < .05$, ** $p < .01$

Table 47. Hierarchical Regression Analysis Results: Adjustment as a Moderator (Overall Leadership as Outcome, Composite Level, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.01	.005	.00	.02	.12		
Moving Away	-.06	.02	-.09	-.02	-.23*	.11**	17.30**
Step 2							
Adjustment x Moving Away	.00	.003	-.004	.01	.02	.00	.14
For Moving Against							
Step 1							
Adjustment	.02	.004	.01	.02	.24**		
Moving Against	-.02	.01	-.04	.00	-.11 [†]	.09**	13.81**
Step 2							
Adjustment x Moving Against	.01	.002	.00	.01	.16**	.02**	7.70**
For Moving Toward							
Step 1							
Adjustment	.02	.004	.01	.03	.29**		
Moving Toward	.02	.01	.00	.05	.11 [†]	.08**	13.29**
Step 2							
Adjustment x Moving Toward	.00	.002	.00	.01	.09	.01	2.54

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 48. Hierarchical Regression Analysis Results: Adjustment as a Moderator (Business Leadership as Outcome, Composite Level, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.01	.01	.00	.02	.13 [†]		
Moving Away	-.05	.02	-.09	-.01	-.20**	.08**	13.29**
Step 2							
Adjustment x Moving Away	.00	.003	-.01	.01	-.01	.00	.03
For Moving Against							
Step 1							
Adjustment	.02	.004	.01	.02	.23**		
Moving Against	-.02	.01	-.04	.00	-.11 [†]	.08**	11.72**
Step 2							
Adjustment x Moving Against	.01	.003	.00	.01	.12*	.02*	4.74*
For Moving Toward							
Step 1							
Adjustment	.02	.004	.01	.03	.26**		
Moving Toward	.02	.01	.00	.05	.10 [†]	.07**	10.79**
Step 2							
Adjustment x Moving Toward	.005	.003	.00	.01	.10 [†]	.01 [†]	2.93 [†]

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 49. Hierarchical Regression Analysis Results: Adjustment as a Moderator (Results Leadership as Outcome, Composite Level, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.01	.01	.00	.02	.10		
Moving Away	-.07	.02	-.11	-.02	-.22**	.09**	13.99**
Step 2							
Adjustment x Moving Away	.00	.003	-.01	.01	.01	.00	0.04
For Moving Against							
Step 1							
Adjustment	.02	.004	.01	.03	.22**		
Moving Against	-.02	.01	-.04	.01	-.09	.07**	10.22*
Step 2							
Adjustment x Moving Against	.01	.003	.00	.01	.13*	.02*	4.91*
For Moving Toward							
Step 1							
Adjustment	.02	.004	.01	.03	.26**		
Moving Toward	.04	.01	.01	.06	.14*	.07**	11.54**
Step 2							
Adjustment x Moving Toward	.00	.003	.00	.01	.08	.01	2.17

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

† p < .10, * p < .05, ** p < .01

Table 50. Hierarchical Regression Analysis Results: Adjustment as a Moderator (People Leadership as Outcome, Composite Level, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.01	.01	.00	.02	.10		
Moving Away	-.06	.02	-.10	-.02	-.21**	.09**	14.81**
Step 2							
Adjustment x Moving Away	.00	.003	.00	.01	.05	.00	0.69
For Moving Against							
Step 1							
Adjustment	.02	.004	.01	.02	.23**		
Moving Against	-.02	.01	-.04	.00	-.09	.07**	11.50**
Step 2							
Adjustment x Moving Against	.01	.003	.00	.01	.16**	.03**	8.31**
For Moving Toward							
Step 1							
Adjustment	.02	.004	.01	.03	.27**		
Moving Toward	.02	.01	-.01	.05	.07	.07**	10.57**
Step 2							
Adjustment x Moving Toward	.00	.003	.00	.01	.10 [†]	.01 [†]	2.74 [†]

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 51. Hierarchical Regression Analysis Results: Adjustment as a Moderator (Self Leadership as Outcome, Composite Level, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.01	.004	.00	.02	.11		
Moving Away	-.05	.02	-.09	-.01	-.21**	.10**	15.50**
Step 2							
Adjustment x Moving Away	.00	.002	.00	.01	.03	.00	0.25
For Moving Against							
Step 1							
Adjustment	.01	.003	.01	.02	.23**		
Moving Against	-.02	.01	-.04	.00	-.11*	.08**	12.95**
Step 2							
Adjustment x Moving Against	.01	.002	.00	.01	.16**	.03**	8.35**
For Moving Toward							
Step 1							
Adjustment	.02	.004	.01	.02	.27**		
Moving Toward	.02	.01	.00	.04	.09	.08**	11.81**
Step 2							
Adjustment x Moving Toward	.00	.002	.00	.01	.05	.00	.79

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

† p < .10, * p < .05, ** p < .01

Table 52. Hierarchical Regression Analysis Results: Adjustment as a Moderator (Business Results Leadership as Outcome, Composite Level, Sample 3).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.00	.01	-.02	.03	.02		
Moving Away	-.04	.05	-.13	.05	-.08	.01	0.91
Step 2							
Adjustment x Moving Away	.00	.01	-.01	.01	-.01	.00	0.03
For Moving Against							
Step 1							
Adjustment	.01	.01	-.01	.03	.07		
Moving Against	-.02	.03	-.07	.04	-.04	.01	0.66
Step 2							
Adjustment x Moving Against	.00	.005	-.01	.01	-.01	.00	0.01
For Moving Toward							
Step 1							
Adjustment	.01	.01	-.01	.03	.07		
Moving Toward	.00	.03	-.06	.06	.00	.01	0.57
Step 2							
Adjustment x Moving Toward	.01	.01	.00	.02	.17*	.03*	6.27*

Note. N = 220. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

† p < .10, * p < .05, ** p < .01

Table 53. Hierarchical Regression Analysis Results: Adjustment as a Moderator (People Results Leadership as Outcome, Composite Level, Sample 3).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Adjustment	.00	.01	-.02	.02	-.02		
Moving Away	-.07	.04	-.14	.01	-.15 [†]	.02	1.78
Step 2							
Adjustment x Moving Away	.00	.005	-.01	.01	-.03	.00	0.11
For Moving Against							
Step 1							
Adjustment	.01	.01	-.01	.03	.07		
Moving Against	.00	.03	-.05	.05	.01	.00	0.45
Step 2							
Adjustment x Moving Against	.00	.004	-.01	.00	-.06	.00	0.73
For Moving Toward							
Step 1							
Adjustment	.01	.01	-.01	.02	.06		
Moving Toward	-.04	.03	-.09	.01	-.11	.02	1.98
Step 2							
Adjustment x Moving Toward	.01	.004	.00	.01	.08	.01	1.57

Note. N = 220. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Unstandardized and standardized coefficients are from the final step and significant values are highlighted (*) only in the standardized column. All Step 1 variables (IV and Moderator) are group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 54. Composite Level Curvilinear Regression Analysis Results (Overall Leadership as Outcome, Sample 1).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Derailing Composite							
Step 1							
Derailing Composite	-.11	.01	-.14	-.09	-.24**	.06**	76.94**
Step 2							
Derailing Composite ²	-.05	.02	-.08	-.02	-.08**	.01**	9.35**

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 55. Composite Level Curvilinear Regression Analysis Results (Getting Ahead Leadership as Outcome, Sample 1).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Derailing Composite							
Step 1							
Derailing Composite	-.08	.01	-.11	-.05	-.16**	.03**	35.08**
Step 2							
Derailing Composite ²	-.04	.02	-.08	-.01	-.07**	.01**	6.91**

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 56. Composite Level Curvilinear Regression Analysis Results (Getting Along Leadership as Outcome, Sample 1).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Derailing Composite							
Step 1							
Derailing Composite	-.14	.02	-.17	-.11	-.24**	.06**	83.72**
Step 2							
Derailing Composite ²	-.05	.02	-.09	-.01	-.07**	.01**	7.04**

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 57. Composite Level Curvilinear Regression Analysis Results (Overall Leadership as Outcome, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Moving Away	-.07	.02	-.10	-.04	-.28	.10**	31.41**
Step 2							
Moving Away ²	-.01	.01	-.02	.01	-.05	.00	0.59
For Moving Against							
Step 1							
Moving Against	-.03	.01	-.05	-.01	-.15*	.02*	6.11*
Step 2							
Moving Against ²	-.01	.004	-.02	.00	-.12*	.015*	4.44*
For Moving Toward							
Step 1							
Moving Toward	.02	.01	-.01	.05	.09	.01	1.83
Step 2							
Moving Toward ²	.00	.01	-.01	.01	.03	.00	0.20

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

† p < .10, * p < .05, ** p < .01

Table 58. Composite Level Curvilinear Regression Analysis Results (Business Leadership as Outcome, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Moving Away	-.07	.02	-.11	-.04	-.26**	.08**	23.46**
Step 2							
Moving Away ²	.00	.01	-.02	.02	-.02	.00	0.13
For Moving Against							
Step 1							
Moving Against	-.03	.06	-.02	.21	-.15*	.02*	6.02*
Step 2							
Moving Against ²	-.01	.005	-.02	.00	-.12*	.01*	4.27*
For Moving Toward							
Step 1							
Moving Toward	.02	.02	-.01	.04	.07	.005	1.40
Step 2							
Moving Toward ²	.00	.01	-.01	.01	-.01	.00	0.01

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

† p < .10, * p < .05, ** p < .01

Table 59. Composite Level Curvilinear Regression Analysis Results (Results Leadership as Outcome, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
9 Moving Away	-.08	.02	-.12	-.05	-.28**	.08**	26.11**
Step 2							
Moving Away ²	.00	.01	-.02	.02	-.02	.00	0.06
For Moving Against							
Step 1							
Moving Against	-.03	.01	-.05	.00	-.12*	.01*	3.96*
Step 2							
Moving Against ²	-.01	.005	-.02	.00	-.12*	.01*	4.21*
For Moving Toward							
Step 1							
Moving Toward	.03	.02	.00	.06	.11 [†]	.01 [†]	3.46 [†]
Step 2							
Moving Toward ²	.00	.01	-.01	.01	.01	.00	0.01

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 60. Composite Level Curvilinear Regression Analysis Results (People Leadership as Outcome, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Moving Away	-.07	.02	-.11	-.04	-.25**	.09**	27.03**
Step 2							
Moving Away ²	-.01	.01	-.03	.01	-.08	.005	1.45
For Moving Against							
Step 1							
Moving Against	-.03	.01	-.05	.00	-.13*	.02*	4.65*
Step 2							
Moving Against ²	-.01	.005	-.02	.00	-.12*	.01*	4.27*
For Moving Toward							
Step 1							
Moving Toward	.02	.02	-.02	.05	.06	.00	0.56
Step 2							
Moving Toward ²	.01	.01	-.01	.02	.05	.00	0.73

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

† p < .10, * p < .05, ** p < .01

Table 61. Composite Level Curvilinear Regression Analysis Results (Self Leadership as Outcome, Sample 2).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Moving Away	-.06	.02	-.09	-.03	-.26**	.09**	27.97**
Step 2							
Moving Away ²	-.01	.01	-.02	.01	-.07	.00	1.11
For Moving Against							
Step 1							
Moving Against	-.03	.01	-.04	.00	-.15*	.02*	6.41*
Step 2							
Moving Against ²	-.01	.004	-.01	.00	-.09	.01	2.17
For Moving Toward							
Step 1							
Moving Toward	.02	.01	-.01	.04	.09	.00	1.26
Step 2							
Moving Toward ²	.005	.01	-.01	.02	.06	.00	0.77

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

† p < .10, * p < .05, ** p < .01

Table 62. Composite Level Curvilinear Regression Analysis Results (Business Results Leadership as Outcome, Sample 3).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Moving Away	-.06	.04	-.15	.02	-.12	.01	1.77
Step 2							
Moving Away ²	.01	.02	-.02	.05	.05	.00	0.51
For Moving Against							
Step 1							
Moving Against	-.01	.03	-.07	.04	-.03	.00	0.25
Step 2							
Moving Against ²	-.01	.01	-.03	.01	-.05	.00	0.60
For Moving Toward							
Step 1							
Moving Toward	-.01	.03	-.07	.05	-.02	.00	0.71
Step 2							
Moving Toward ²	.00	.01	-.03	.03	.01	.00	0.01

Note. N = 220. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

† p < .10, * p < .05, ** p < .01

Table 63. Composite Level Curvilinear Regression Analysis Results (People Results Leadership as Outcome, Sample 3).

Variables	b	SE b	95% CI		β	ΔR^2	ΔF
			LB	UB			
For Moving Away							
Step 1							
Moving Away	-.06	.04	-.13	.01	-.13 [†]	.02 [†]	3.46 [†]
Step 2							
Moving Away ²	.00	.02	-.03	.03	.01	.00	0.20
For Moving Against							
Step 1							
Moving Against	.01	.03	-.04	.06	.02	.00	.056
Step 2							
Moving Against ²	.00	.01	-.02	.02	-.03	.00	0.16
For Moving Toward							
Step 1							
Moving Toward	-.05	.03	-.10	.00	-.13 [†]	.02 [†]	3.34 [†]
Step 2							
Moving Toward ²	-.01	.01	-.03	.02	-.03	.00	0.26

Note. N = 220. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound, UB = Upper Bound. Unstandardized and standardized coefficients are from the final step of the regression and significant values are highlighted (*) only in the standardized column. Step 1 variable is group mean centered.

[†] p < .10, * p < .05, ** p < .01

Table 64. Hierarchical Regression Analysis Results (Overall Leadership as Outcome, Sample 1).

	b	SE b	95% CI		β	b	SE b	95% CI		β	B	SE b	95% CI		β
			LB	UB				LB	UB				LB	UB	
Agreeableness	.09	.02	.06	.12	.20**						.04	.02	.00	.07	.09*
Conscientiousness	-.02	.01	-.04	.01	-.05						-.02	.01	-.05	.00	-.06 [†]
Emotional Stability	.05	.02	.01	.08	.11**						.03	.02	-.01	.06	.06
Extraversion	.06	.02	.03	.09	.17**						.10	.02	.06	.13	.26**
Openness to Experience	-.04	.02	-.07	-.01	-.09**						-.02	.02	-.05	.01	-.04
Ego-centered						.02	.01	.00	.04	.06*	-.01	.01	-.03	.01	-.04
Intimidating						-.06	.01	-.08	-.03	-.15**	-.05	.01	-.08	-.03	-.14**
Manipulation						-.02	.01	-.04	.00	-.07*	-.02	.01	-.04	-.01	-.09**
Micro-managing						-.03	.01	-.06	-.01	-.09**	.00	.01	-.02	.03	.01
Passive															
Aggressive						-.03	.01	-.06	-.01	-.09**	.00	.01	-.02	.03	.01
Multiple R	.33**					.27**					.38**				
R ²	.11**					.07**					.14**				
Δ R ²											.03**				
Adjusted R	.33					.26					.36				
Adjusted R ²	.11					.07					.13				

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 65. Hierarchical Regression Analysis Results (Getting Ahead as Outcome, Sample 1).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Agreeableness	.02	.02	-.01	.06	.05						-.02	.02	-.06	.02	-.04
Conscientiousness	.01	.01	-.01	.04	.03						.01	.01	-.02	.03	.02
Emotional															
Stability	.06	.02	.03	.10	.13**						.04	.02	.01	.08	.09*
Extraversion	.10	.02	.07	.13	.24**						.13	.02	.09	.16	.31**
Openness to															
Experience	-.01	.02	-.04	.02	-.02						.01	.02	-.02	.05	.03
Ego-centered						.04	.01	.02	.06	.11**	-.02	.01	-.04	.00	-.05
Intimidating						-.02	.01	-.05	.00	-.05 [†]	-.03	.01	-.05	.00	-.07*
Manipulation						-.02	.01	-.04	.00	-.07*	-.03	.01	-.04	-.01	-.09**
Micro-managing						-.04	.01	-.07	-.01	-.09**	-.01	.01	-.03	.02	-.01
Passive															
Aggressive						-.05	.01	-.07	-.02	-.11**	.01	.01	-.02	.03	.01
Multiple R	.38**					.23**					.40**				
R ²	.14**					.05**					.16**				
Δ R ²											.02**				
Adjusted R	.37					.22					.40				
Adjusted R ²	.14					.05					.16				

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 66. Hierarchical Regression Analysis Results (Getting Along as Outcome, Sample 1).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Agreeableness	.17	.02	.13	.21	.31**						.11	.02	.06	.15	.20**
Conscientiousness	-.06	.01	-.09	-.03	-.14**						-.07	.02	-.10	-.04	-.16**
Emotional															
Stability	.02	.02	-.02	.06	.03						.00	.02	-.05	.04	-.01
Extraversion	.03	.02	-.01	.07	.07 [†]						.07	.02	.03	.11	.16**
Openness to															
Experience	-.07	.02	-.11	-.02	-.12**						-.05	.02	-.09	.00	-.08*
Ego-centered						.00	.01	-.02	.03	.01	.00	.01	-.03	.02	-.01
Intimidating						-.10	.01	-.12	-.07	-.20**	-.09	.01	-.12	-.06	-.19**
Manipulation						-.02	.01	-.04	.00	-.06	-.02	.01	-.04	.00	-.07*
Micro-managing						-.03	.02	-.06	.00	-.07*	.01	.02	-.02	.04	.02
Passive															
Aggressive						-.01	.01	-.04	.01	-.03	.00	.02	-.03	.03	.00
Multiple R	.29**					.28**					.34**				
R ²	.08**					.08**					.12**				
ΔR^2											.04**				
Adjusted R	.28					.28					.33				
Adjusted R ²	.08					.08					.11				

Note. N = 1306. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 67. Hierarchical Regression Analysis Results (Overall Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	B	SE b	LB	UB	β
Adjustment	.01	.00	.00	.02	.21**						.01	.01	.00	.02	.09
Ambition	.03	.01	.01	.06	.18**						.03	.01	.00	.06	.16*
Sociability	-.01	.00	-.02	.00	-.16*						-.01	.01	-.02	.00	-.16*
Interpersonal															
Sensitivity	.00	.01	-.02	.02	.00						.00	.01	-.02	.02	.00
Prudence	.00	.01	-.01	.01	-.01						-.01	.01	-.02	.00	-.14 [†]
Inquisitive	.00	.00	-.01	.01	-.03						.00	.00	-.01	.01	-.02
Learning															
Approach	.01	.01	-.01	.02	.08						.00	.01	-.01	.02	.03
Excitable						-.02	.01	-.04	.00	-.13*	-.02	.01	-.04	.00	-.11
Skeptical						-.02	.01	-.04	.00	-.11	-.02	.01	-.04	.00	-.12
Cautious						-.03	.01	-.06	-.01	-.21**	-.02	.01	-.05	.00	-.13 [†]
Reserved						.02	.01	.00	.04	.10	.01	.01	-.01	.04	.08
Leisurely						-.02	.01	-.04	.00	-.13*	-.02	.01	-.04	.00	-.14*
Bold						.00	.01	-.01	.02	.04	.00	.01	-.02	.02	.02
Mischievous						-.01	.01	-.03	.01	-.07	-.01	.01	-.03	.01	-.07
Colorful						.00	.01	-.01	.02	.01	.01	.01	-.01	.02	.05
Imaginative						-.01	.01	-.03	.00	-.10	-.01	.01	-.03	.01	-.07
Diligent						.02	.01	.00	.04	.14*	.03	.01	.01	.05	.16**
Dutiful						.01	.01	-.01	.03	.05	.01	.01	-.01	.03	.06
Multiple R	.34**					.40**					.44**				
R ²	.11**					.16**					.19**				
ΔR^2											.08**				
Adjusted R	.30					.36					.37				
Adjusted R ²	.09					.13					.14				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 68. Hierarchical Regression Analysis Results (Business Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Adjustment	.01	.00	.00	.02	.18**						.00	.01	-.01	.02	.07
Ambition	.04	.01	.01	.07	.20**						.04	.01	.01	.06	.17*
Sociability	-.01	.01	-.02	.00	-.17*						-.01	.01	-.02	.00	-.15*
Interpersonal															
Sensitivity	.00	.01	-.02	.02	-.03						.00	.01	-.02	.02	-.01
Prudence	.00	.01	-.01	.01	-.01						-.01	.01	-.02	.00	-.11
Inquisitive	.00	.01	-.01	.01	.03						.00	.01	-.01	.01	.04
Learning															
Approach	.01	.01	-.01	.02	.06						.00	.01	-.01	.02	.01
Excitable						-.01	.01	-.03	.00	-.09	-.01	.01	-.03	.01	-.07
Skeptical						-.01	.01	-.03	.01	-.07	-.01	.01	-.03	.01	-.08
Cautious						-.04	.01	-.07	-.02	-.25**	-.03	.01	-.06	.00	-.18*
Reserved						.02	.01	.00	.04	.11 [†]	.02	.01	-.01	.04	.09
Leisurely						-.02	.01	-.04	.00	-.10 [†]	-.02	.01	-.04	.00	-.10 [†]
Bold						.00	.01	-.02	.02	.02	.00	.01	-.02	.02	.00
Mischievous						.00	.01	-.02	.01	-.03	-.01	.01	-.03	.01	-.05
Colorful						.00	.01	-.02	.02	-.02	.00	.01	-.02	.02	.02
Imaginative						-.02	.01	-.04	.00	-.12 [†]	-.02	.01	-.04	.00	-.10
Diligent						.03	.01	.01	.05	.17**	.03	.01	.01	.05	.18**
Dutiful						.00	.01	-.02	.03	.03	.01	.01	-.02	.03	.03
Multiple R	.33**					.39**					.43**				
R ²	.11**					.15**					.18**				
ΔR^2											.08*				
Adjusted R	.30					.35					.36				
Adjusted R ²	.09					.12					.13				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 69. Hierarchical Regression Analysis Results (Results Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	B	SE b	LB	UB	β
Adjustment	.01	.01	.00	.03	.19**						.01	.01	-.01	.02	.08 [†]
Ambition	.03	.02	.00	.06	.15*						.03	.02	.00	.06	.12
Sociability	-.01	.01	-.02	.00	-.14*						-.01	.01	-.02	.00	-.15*
Interpersonal															
Sensitivity	-.01	.01	-.03	.01	-.05						-.01	.01	-.03	.02	-.04
Prudence	.00	.01	-.01	.01	.00						-.01	.01	-.03	.00	-.14 [†]
Inquisitive	.00	.01	-.01	.01	-.02						.00	.01	-.01	.01	-.01
Learning															
Approach	.02	.01	.00	.03	.12 [†]						.01	.01	-.01	.03	.06
Excitable						-.02	.01	-.04	.00	-.11 [†]	-.02	.01	-.04	.01	-.10
Skeptical						-.02	.01	-.05	.00	-.13 [†]	-.02	.01	-.05	.00	-.14 [†]
Cautious						-.04	.01	-.07	-.02	-.21**	-.03	.02	-.06	.00	-.15*
Reserved						.02	.01	.00	.05	.13*	.02	.01	-.01	.04	.09
Leisurely						-.02	.01	-.05	.00	-.12 [†]	-.03	.01	-.05	.00	-.13*
Bold						.01	.01	-.01	.03	.05	.00	.01	-.02	.03	.03
Mischievous						-.01	.01	-.03	.02	-.04	-.01	.01	-.03	.01	-.05
Colorful						.00	.01	-.02	.02	.02	.01	.01	-.01	.03	.06
Imaginative						-.02	.01	-.04	.01	-.10	-.01	.01	-.03	.01	-.08
Diligent						.03	.01	.01	.05	.17**	.04	.01	.01	.06	.19**
Dutiful						.01	.01	-.01	.03	.06	.01	.01	-.01	.04	.07
Multiple R	.31**					.40**					.43**				
R ²	.10**					.16**					.19**				
ΔR^2											.09**				
Adjusted R	.28					.35					.36				
Adjusted R ²	.08					.12					.13				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 70. Hierarchical Regression Analysis Results (People Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Adjustment	.01	.01	.00	.02	.20**						.01	.01	-.01	.02	.08
Ambition	.03	.01	.00	.06	.14*						.03	.02	.00	.06	.12 [†]
Sociability	-.01	.01	-.02	.00	-.10						-.01	.01	-.02	.00	-.09
Interpersonal															
Sensitivity	.01	.01	-.01	.03	.05						.01	.01	-.01	.03	.06
Prudence	.00	.01	-.01	.01	-.02						-.01	.01	-.02	.00	-.12
Inquisitive	-.01	.01	-.02	.00	-.08						-.01	.01	-.02	.01	-.07
Learning															
Approach	.01	.01	-.01	.02	.05						.00	.01	-.01	.02	.01
Excitable						-.02	.01	-.04	.00	-.11 [†]	-.02	.01	-.04	.01	-.10
Skeptical						-.02	.01	-.04	.01	-.09	-.02	.01	-.04	.01	-.10
Cautious						-.03	.01	-.06	-.01	-.18*	-.02	.01	-.05	.01	-.12
Reserved						.01	.01	-.01	.03	.05	.01	.01	-.01	.04	.07
Leisurely						-.02	.01	-.04	.00	-.11 [†]	-.02	.01	-.04	.00	-.12 [†]
Bold						.01	.01	-.01	.03	.06	.01	.01	-.01	.03	.06
Mischievous						-.01	.01	-.03	.01	-.09	-.01	.01	-.03	.01	-.08
Colorful						.00	.01	-.02	.02	.00	.00	.01	-.02	.02	.02
Imaginative						-.01	.01	-.03	.01	-.08	-.01	.01	-.03	.01	-.06
Diligent						.01	.01	-.01	.03	.08	.02	.01	.00	.04	.10
Dutiful						.01	.01	-.01	.03	.04	.01	.01	-.02	.03	.04
Multiple R	.30**					.35**					.38**				
R ²	.09**					.12**					.15**				
ΔR^2											.05				
Adjusted R	.26					.30					.30				
Adjusted R ²	.07					.09					.09				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 71. Hierarchical Regression Analysis Results (Self Leadership as Outcome, Sample 2).

	95% CI					95% CI					95% CI				
	b	SE b	LB	UB	β	b	SE b	LB	UB	β	b	SE b	LB	UB	β
Adjustment	.01	.00	.00	.02	.21**						.01	.01	.00	.02	.12
Ambition	.03	.01	.01	.05	.17*						.03	.01	.01	.06	.17*
Sociability	-.01	.00	-.02	.00	-.18**						-.01	.01	-.02	.00	-.20**
Interpersonal															
Sensitivity	.00	.01	-.01	.02	.02						.00	.01	-.02	.02	.01
Prudence	.00	.01	-.01	.01	-.02						-.01	.01	-.02	.00	-.14 [†]
Inquisitive	.00	.00	-.01	.01	-.05						.00	.00	-.01	.01	-.04
Learning															
Approach	.00	.01	-.01	.02	.04						.00	.01	-.01	.01	.01
Excitable						-.02	.01	-.04	.00	-.15*	-.02	.01	-.04	.00	-.12 [†]
Skeptical						-.01	.01	-.03	.01	-.10	-.01	.01	-.03	.01	-.11
Cautious						-.02	.01	-.04	.00	-.11	-.01	.01	-.03	.02	-.03
Reserved						.01	.01	-.01	.03	.07	.01	.01	-.01	.03	.05
Leisurely						-.02	.01	-.04	.00	-.14*	-.02	.01	-.04	.00	-.15*
Bold						.00	.01	-.02	.02	.00	.00	.01	-.02	.02	-.02
Mischievous						-.01	.01	-.03	.01	-.09	-.01	.01	-.03	.01	-.08
Colorful						.01	.01	-.01	.02	.05	.01	.01	-.01	.03	.10
Imaginative						-.01	.01	-.02	.01	-.05	.00	.01	-.02	.02	-.02
Diligent						.01	.01	-.01	.03	.08	.02	.01	.00	.04	.12 [†]
Dutiful						.01	.01	-.01	.03	.06	.01	.01	-.01	.03	.07
Multiple R	.33**					.36**					.42**				
R ²	.11**					.13**					.18**				
ΔR^2											.07*				
Adjusted R	.30					.32					.35				
Adjusted R ²	.09					.10					.12				

Note. N = 290. 95% Confidence Interval: CI = Confidence Interval; LB = Lower Bound and UB = Upper Bound. Significant values are highlighted (*) only in the Beta (standardized values) column.

[†] p < .10, * p < 0.05, ** p < 0.01

Table 72. Summary Table for Interaction Analysis of the Additive Model (Sample 1).

Focal Variable	<u>Leadership Performance Outcomes</u>		
	Overall Leadership	Getting Ahead Leadership	Getting Along Leadership
Derailing Composite	Y	Y	Y
Ego-centered	N	N	N
Intimidating	N	N	N
Manipulation	Y*	N	N
Micro-managing	Y	Y	Y
Passive Aggressive	Y	Y	Y

Note. N = 1306. Y = $p < .05$; Y* = $p < .10$; N = $p > .10$.

Table 73. Summary Table for Curvilinear Analysis of the Additive Model (Sample 1).

Focal Variable	<u>Leadership Performance Outcomes</u>		
	Overall Leadership	Getting Ahead Leadership	Getting Along Leadership
Derailing Composite	Y	Y	Y
Ego-centered	N	N	N
Intimidating	N	Y*	N
Manipulation	Y*	N	Y*
Micro-managing	N	N	N
Passive Aggressive	Y	N	Y

Note. N = 1306. Y = $p < .05$; Y* = $p < .10$; N = $p > .10$.

Table 74. Summary Table for Interaction Analysis of the Additive Model (Sample 2).

Focal Variable	<u>Leadership Performance Outcomes</u>				
	Overall	Business	Results	People	Self
Moving Away	N	N	N	N	N
Moving Against	Y	Y	Y	Y	Y
Moving Toward	N	Y*	N	Y*	N
Excitable	Y*	Y*	Y	N	N
Skeptical	Y	Y*	N	Y	Y
Cautious	N	N	N	N	N
Reserved	N	N	N	N	N
Leisurely	N	N	N	N	N
Bold	Y	N	N	Y	Y
Mischievous	N	N	N	Y*	Y
Colorful	Y	Y	Y	Y	Y
Imaginative	N	N	N	N	N
Diligent	N	N	N	N	N
Dutiful	N	N	N	N	N

Note. N = 290. Y = $p < .05$; Y* = $p < .10$; N = $p > .10$.

Table 75. Summary Table for Curvilinear Analysis of the Additive Model (Sample 2).

Focal Variable	<u>Leadership Performance Outcomes</u>				
	Overall	Business	Results	People	Self
Moving Away	N	N	N	N	N
Moving Against	Y	Y	Y	Y	Y
Moving Toward	N	N	N	N	N
Excitable	Y	Y	Y	N	N
Skeptical	Y	Y	Y*	Y	Y
Cautious	N	N	N	N	N
Reserved	N	N	N	N	N
Leisurely	N	Y*	N	N	N
Bold	N	N	N	N	N
Mischievous	Y*	N	N	Y*	Y
Colorful	Y*	Y*	Y*	Y*	N
Imaginative	N	N	N	N	N
Diligent	Y	Y*	Y	Y	Y
Dutiful	N	N	N	N	N

Note. N = 290. Y = $p < .05$; Y* = $p < .10$; N = $p > .10$.

Appendix B: Figures

Figure Captions

- Figure 1. HPI Mapping with FFM Traits and Median Correlations.
- Figure 2. GPI FFM Dimension Distributions.
- Figure 3. GPI Derailing Leadership Trait Distributions.
- Figure 4. Scree Plot from Assessment Center Competency Ratings.
- Figure 5. Rationally Derived Assessment Center Factor Distributions.
- Figure 6. Empirically Derived Assessment Center Factor Distributions.
- Figure 7. HPI Dimension Distributions for Sample 2.
- Figure 8. HDS Dimension Distributions for Sample 2.
- Figure 9. Leadership Rating Distributions for Sample 2.
- Figure 10. HPI Dimension Distributions for Sample 3.
- Figure 11. HDS Dimension Distributions for Sample 3.
- Figure 12. Leadership Rating Distributions for Sample 3.
- Figure 13a. Measurement model for the higher-order factors of the HDS.
- Figure 13b. Standardized path coefficients and model fit statistics for higher-order factors of the HDS.
- Figure 13c. Standardized path coefficients and model fit statistics for higher-order factors of the HDS. Model incorporates two cross-loadings for primary scales (Skeptical and Cautious) as well as three free error covariances (Excitable-Skeptical, Colorful-Skeptical, and Colorful-Reserved; all $p < .01$).
- Figure 14a. Measurement model for the derailing composite scale.
- Figure 14b. Standardized path coefficients and model fit statistics for derailing composite.
- Figure 15. Interaction between derailing composite and emotional stability for overall leadership.
- Figure 16. Interaction between derailing composite and emotional stability for getting ahead leadership.
- Figure 17. Interaction between derailing composite and emotional stability for getting along leadership.
- Figure 18. Interaction between moving against composite and adjustment for overall leadership.
- Figure 19. Interaction between moving against composite and adjustment for business leadership.
- Figure 20. Interaction between moving against composite and adjustment for results leadership.

Figure 21. Interaction between moving against composite and adjustment for people leadership.

Figure 22. Interaction between moving against composite and adjustment for self leadership.

Figure 23. Curvilinear relationship between derailing composite and overall leadership (with quadratic trend line).

Figure 24. Curvilinear relationship between derailing composite and getting ahead leadership (with quadratic trend line).

Figure 25. Curvilinear relationship between derailing composite and getting along leadership (with quadratic trend line).

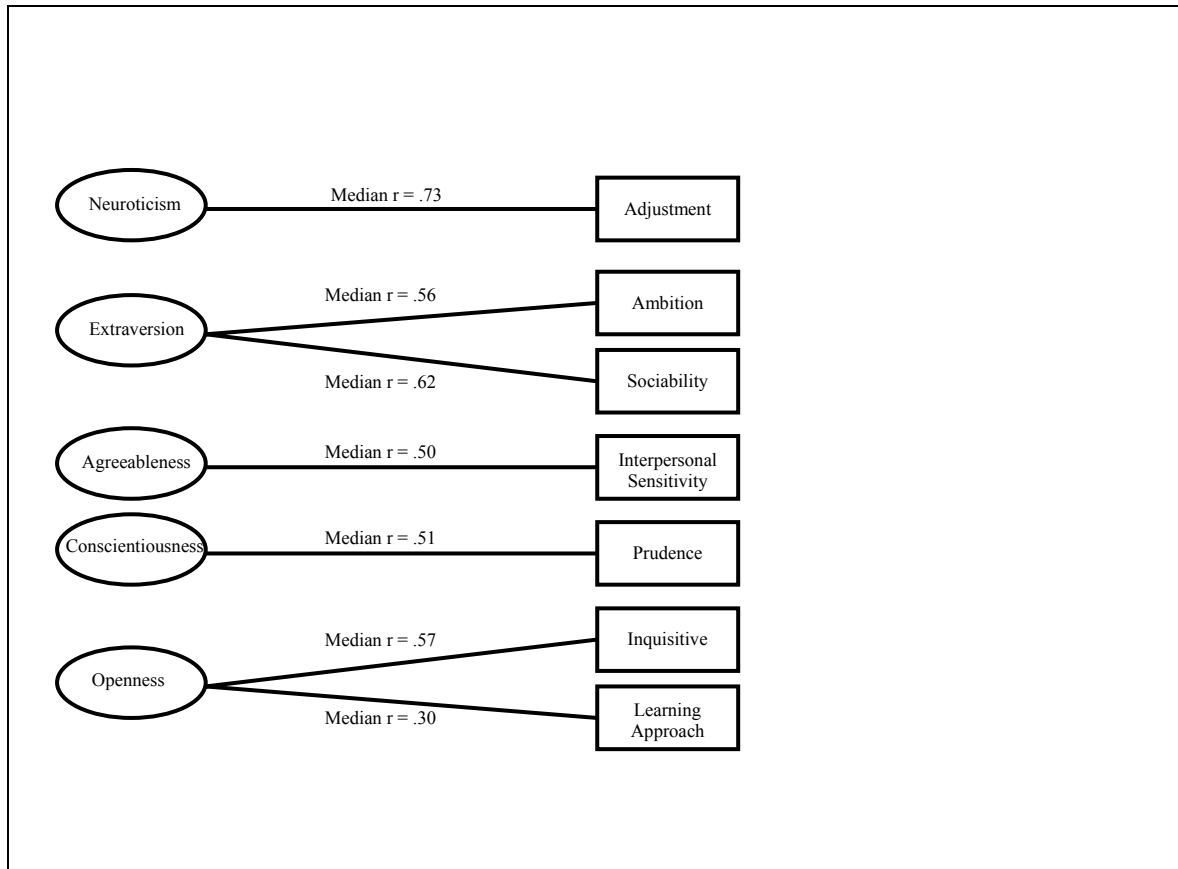
Figure 26. Curvilinear relationship between moving against composite and overall leadership (with quadratic trend line).

Figure 27. Curvilinear relationship between moving against composite and business leadership (with quadratic trend line).

Figure 28. Curvilinear relationship between moving against composite and results leadership (with quadratic trend line).

Figure 29. Curvilinear relationship between moving against composite and people leadership (with quadratic trend line).

Figure 30. Curvilinear relationship between moving against composite and self leadership (with quadratic trend line).



Note. Median correlation coefficients summarize HPI relations with the NEO PI-R (Goldberg, 2000), Goldberg's (1992) Big-Five Markers (R. Hogan & Hogan, 1995), Personal Characteristics Inventory (Mount & Barrick, 2001), and the Inventario de Personalidad de Cinco Factores (Salgado & Moscoso, 1999). The ranges of correlates are as follows: Adjustment/Emotional Stability/Neuroticism (.66 to .81); Ambition/Extraversion/Surgency (.39 to .60); Sociability/ Extraversion/Surgency (.44 to .64); Interpersonal Sensitivity/Agreeableness (.22 to .61); Prudence/Conscientiousness (.36 to .59); Inquisitive/Openness/Intellect (.33 to .69); Learning Approach/Openness/Intellect (.05 to .35).

Source: Hogan and Holland (2003)

Figure 1. HPI Mapping with FFM Traits and Median Correlations.

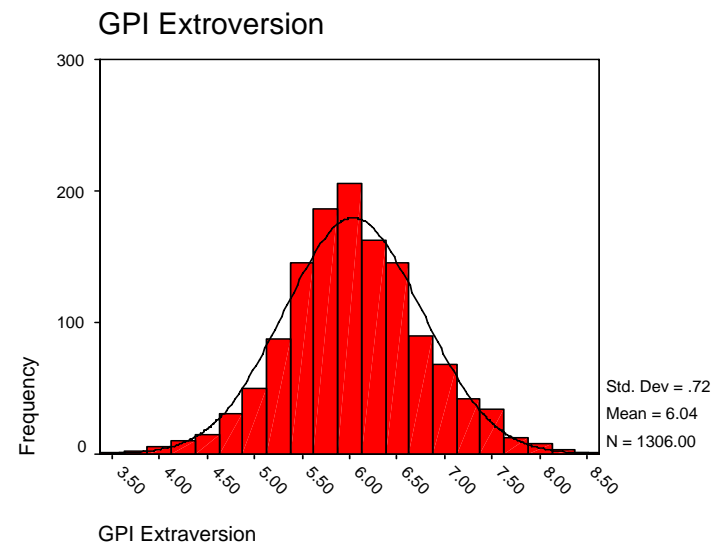
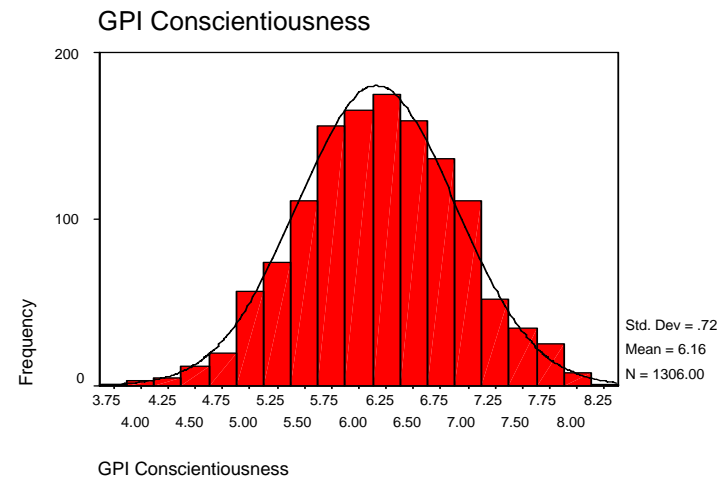
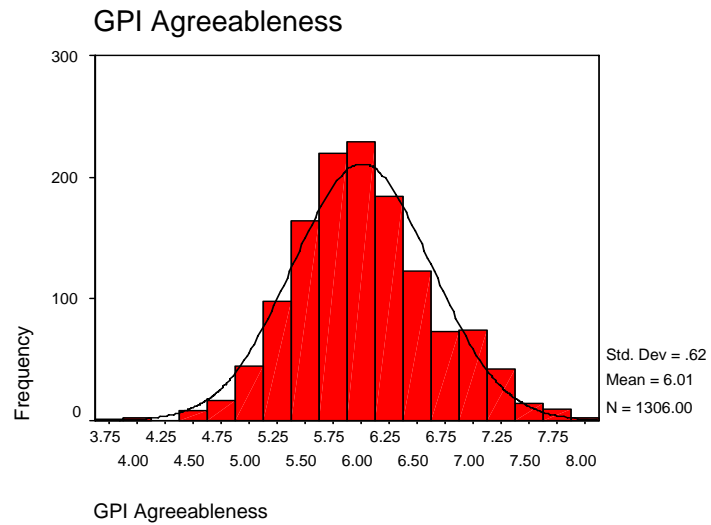


Figure 2. GPI FFM Dimension Distributions.

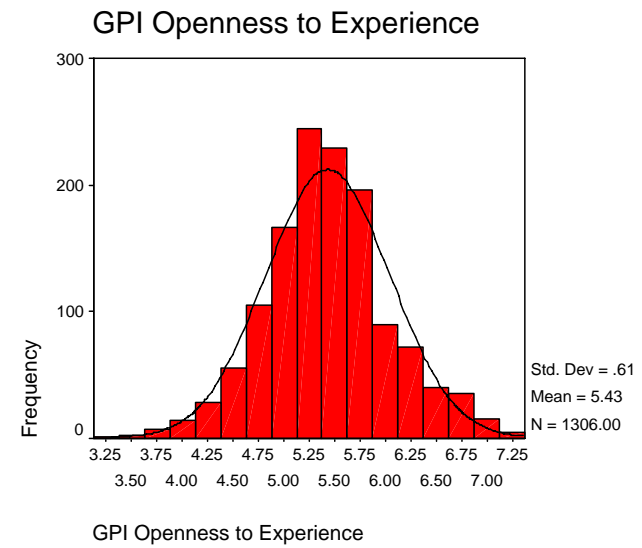
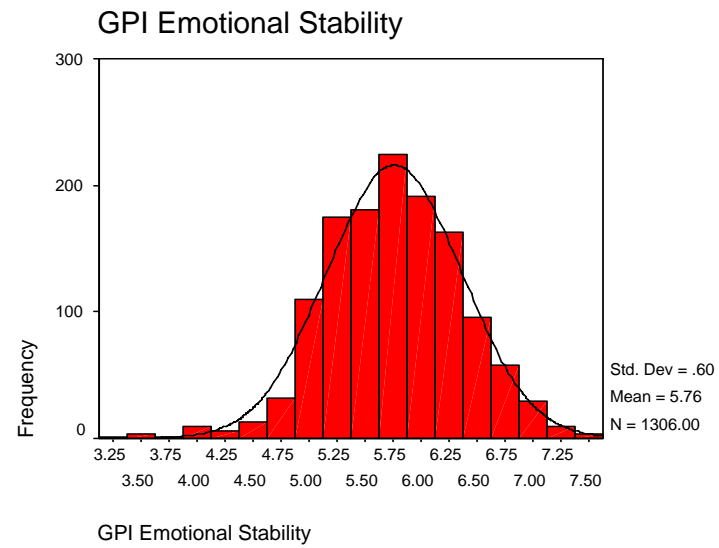
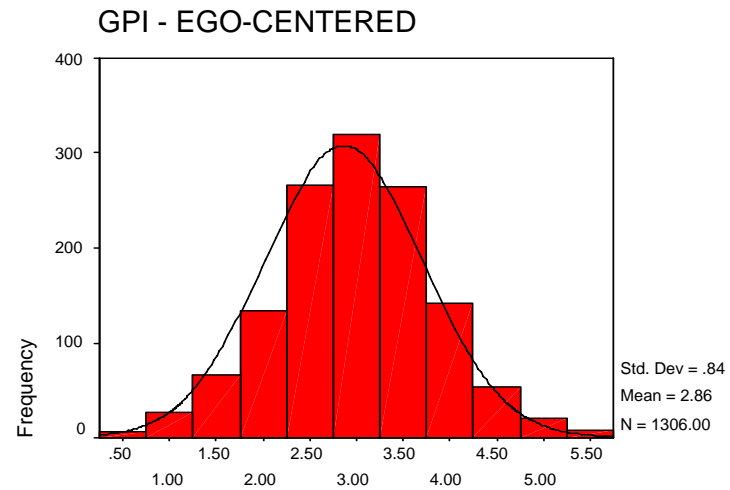
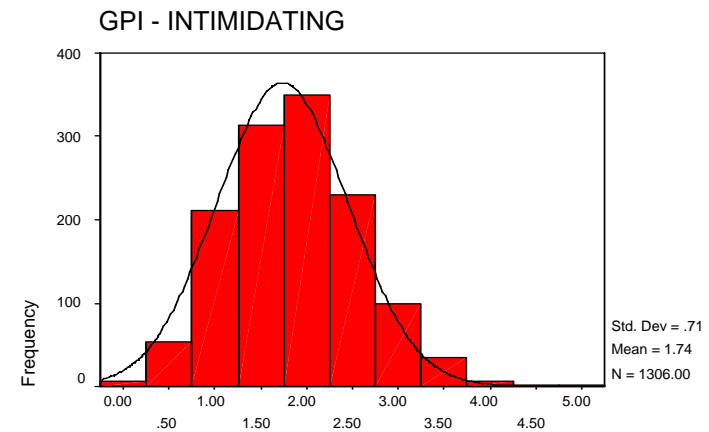


Figure 2 Continued. GPI FFM Dimension Distributions.



GPI - EGO-CENTERED



GPI - INTIMIDATING

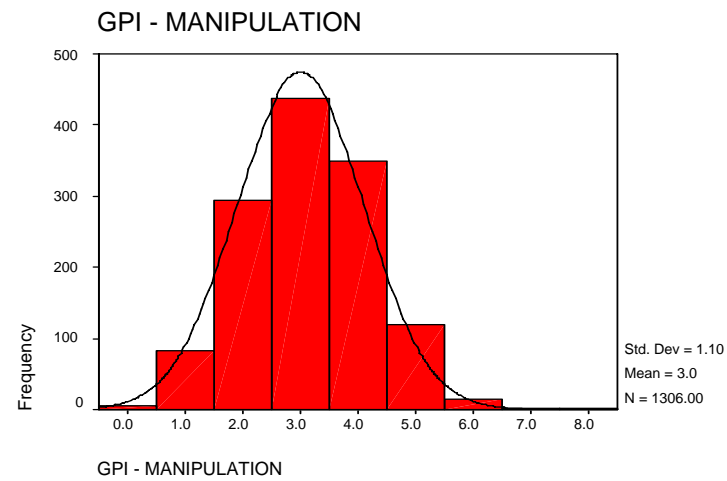
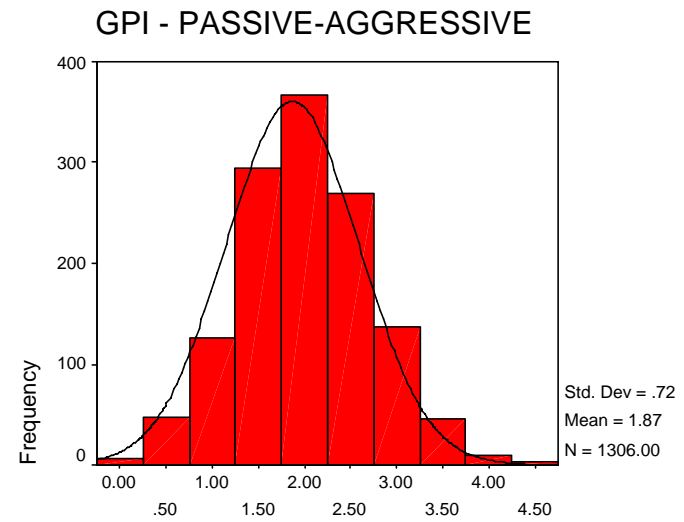
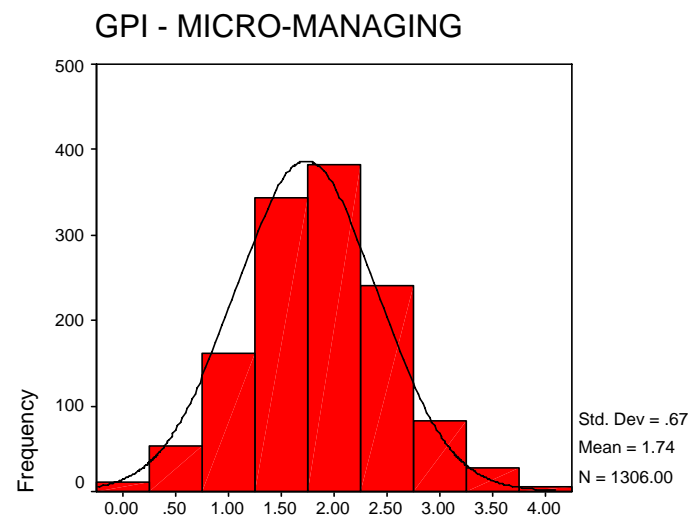


Figure 3. GPI Derailing Leadership Trait Distributions.



GPI - MICRO-MANAGING

GPI - PASSIVE-AGGRESSIVE

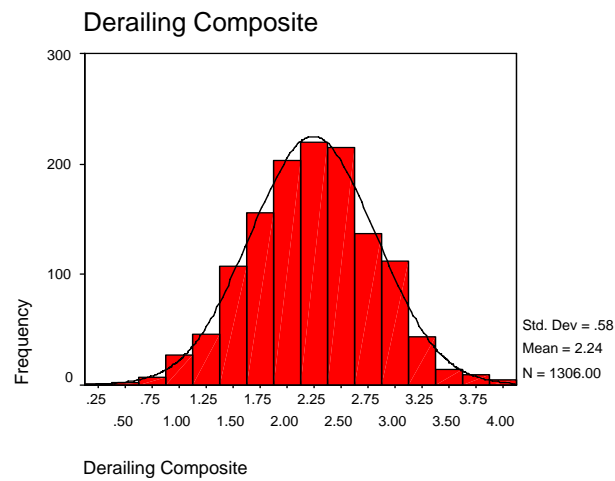


Figure 3 Continued. GPI Derailing Leadership Trait Distributions.

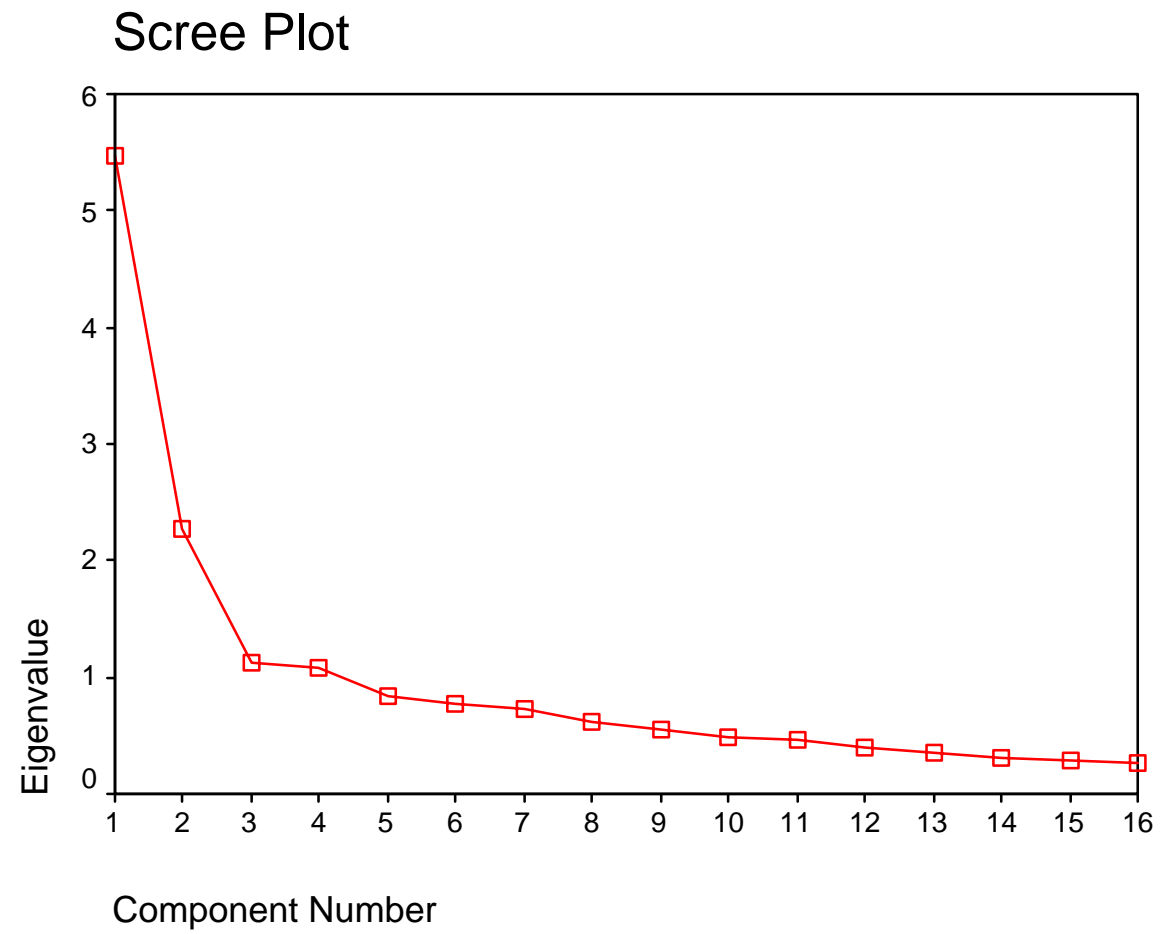
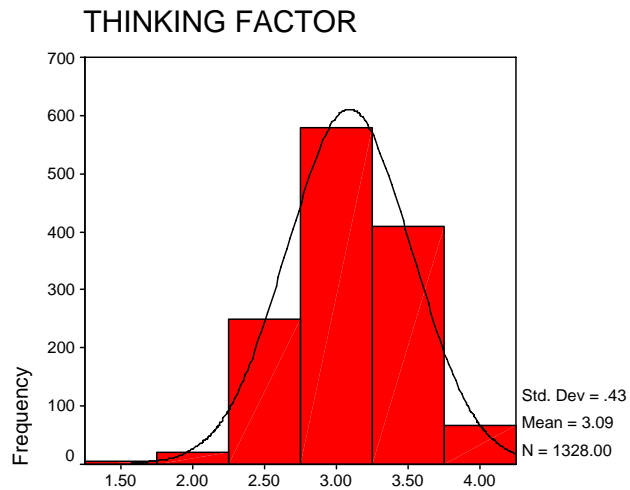
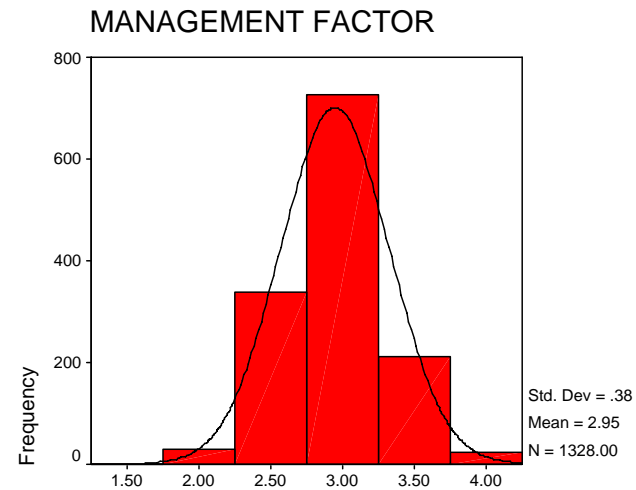


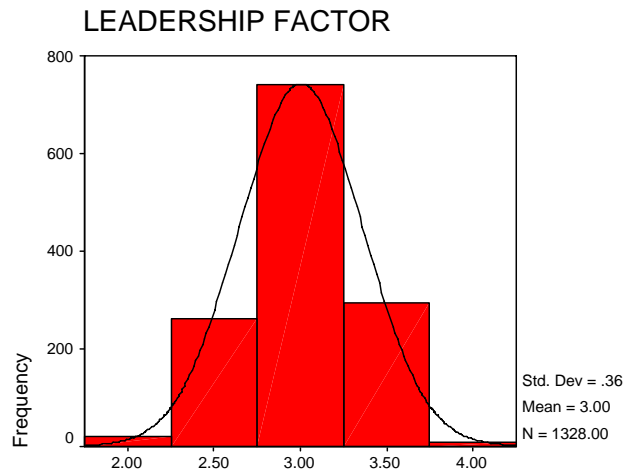
Figure 4. Scree Plot from Assessment Center Competency Scores



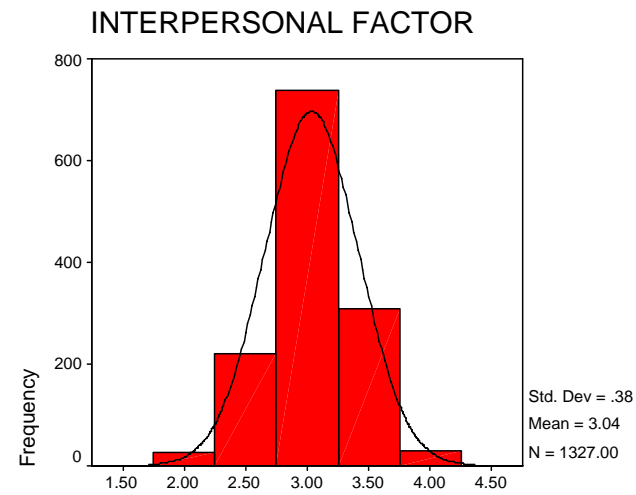
THINKING FACTOR



MANAGEMENT FACTOR



LEADERSHIP FACTOR



INTERPERSONAL FACTOR

Figure 5. Rationally Derived Assessment Center Factor Distributions.

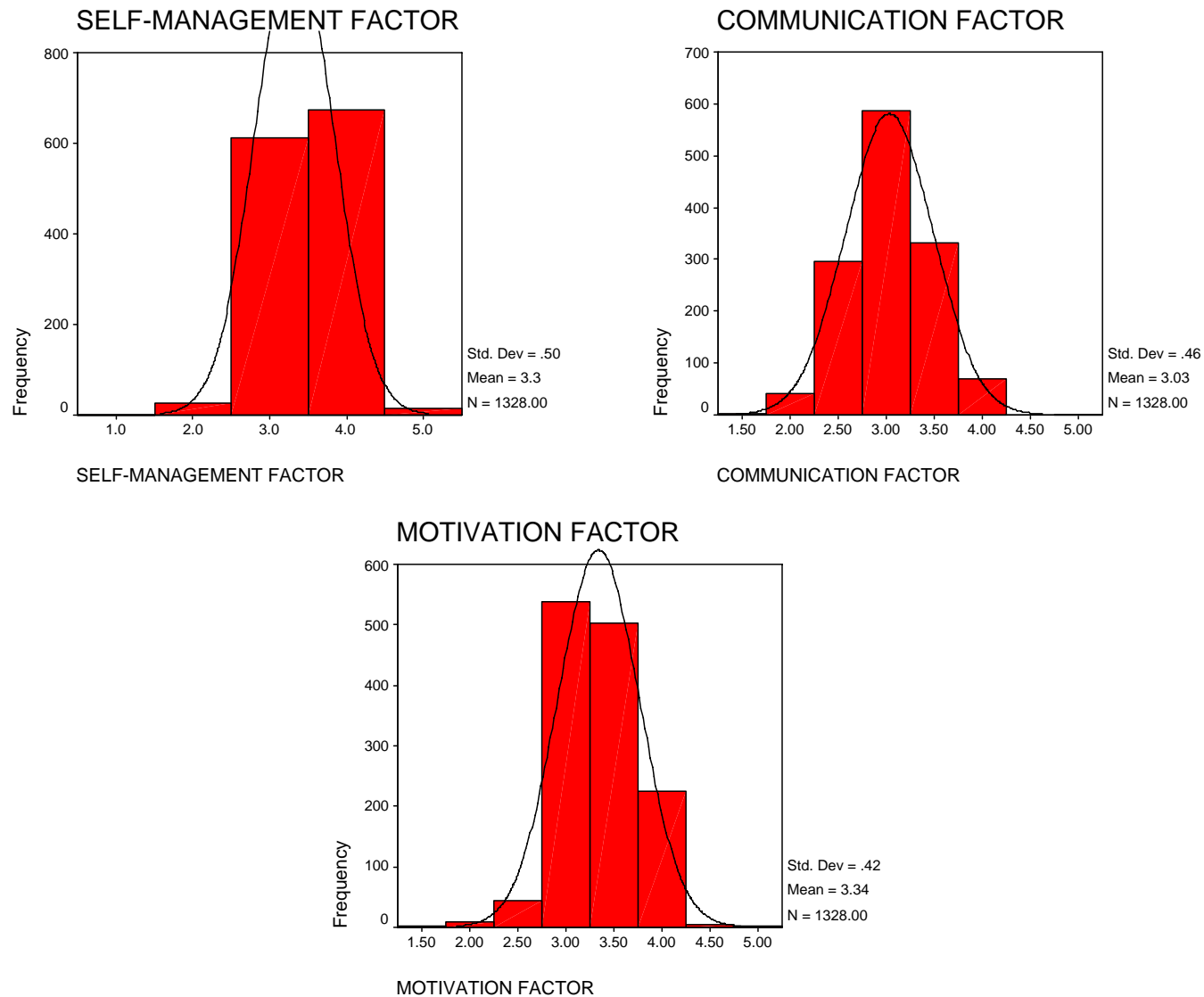
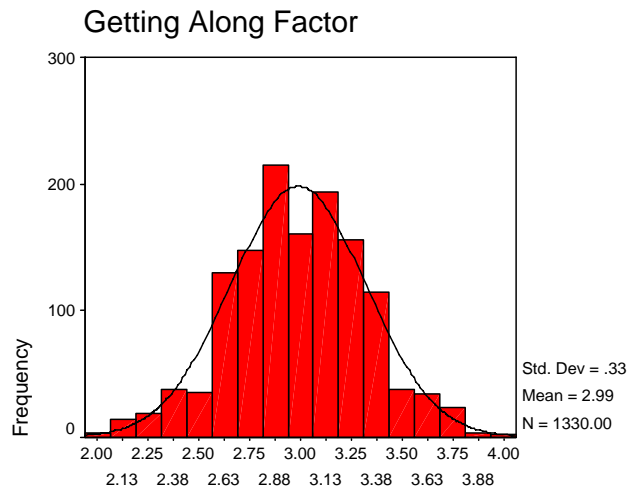
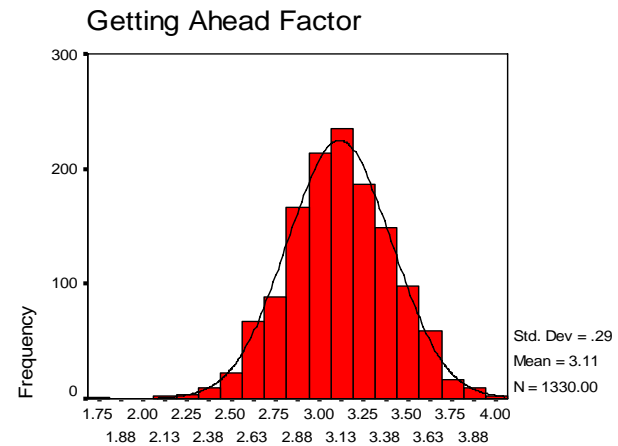


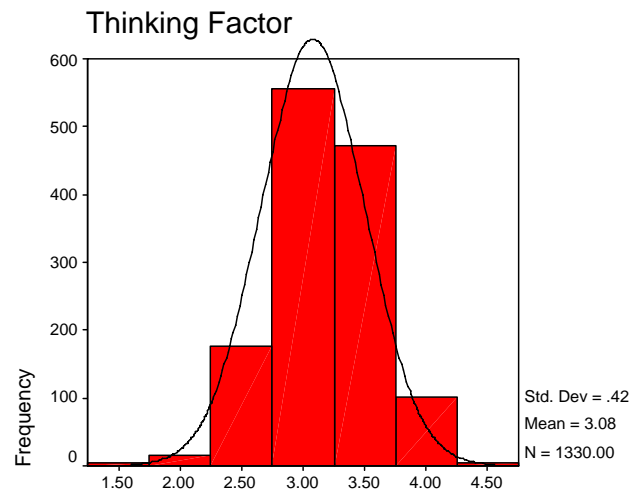
Figure 5 Continued. Rationally Derived Assessment Center Factor Distributions.



Getting Along Factor



Getting Ahead Factor



Thinking Factor

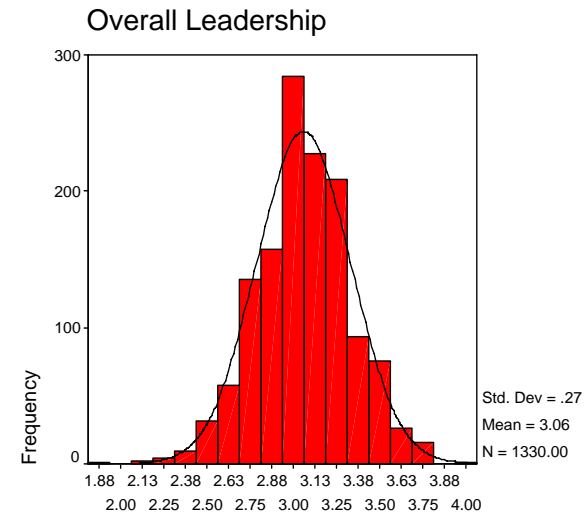
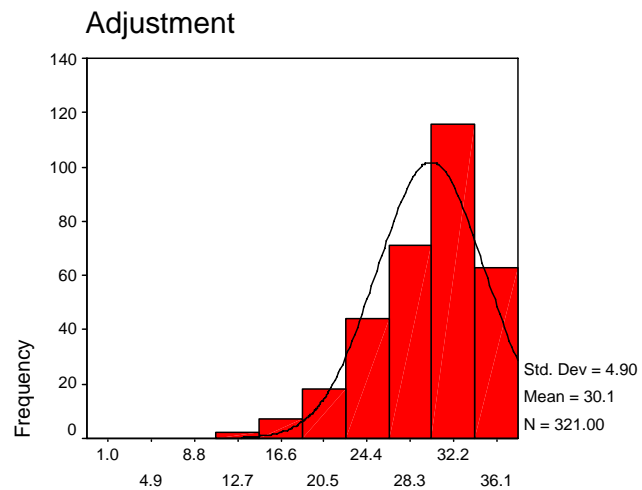
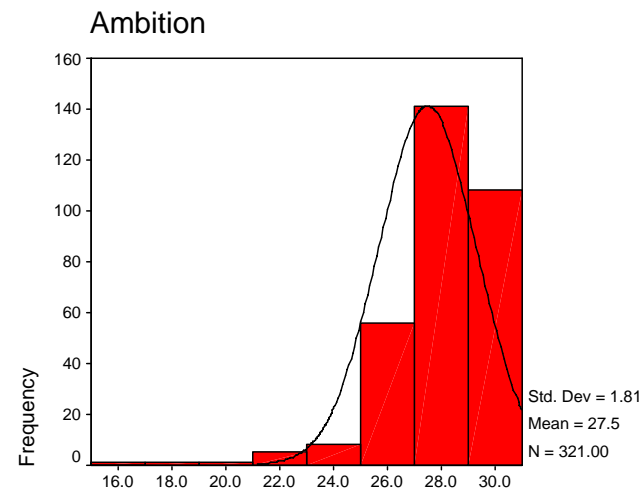


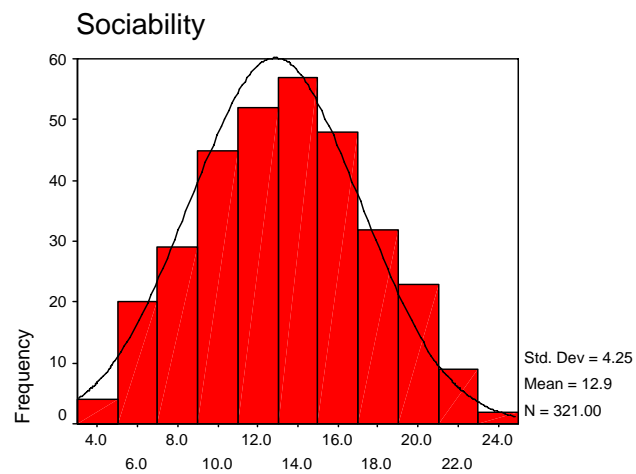
Figure 6. Empirically Derived Assessment Center Factor Distributions.



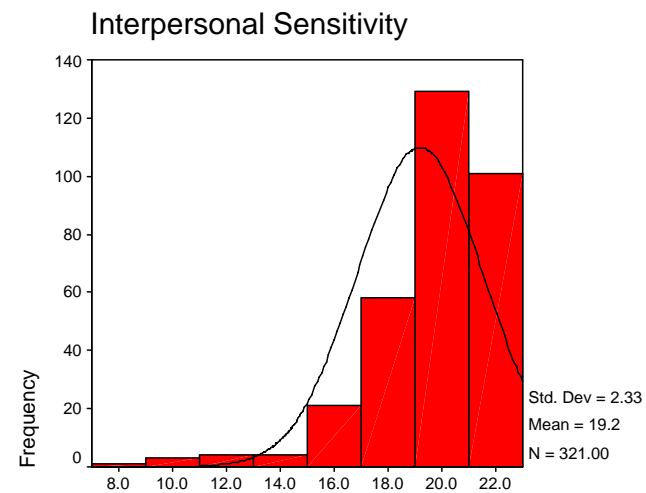
Adjustment



Ambition



Sociability



Interpersonal Sensitivity

Figure 7. HPI Dimension Distributions for Sample 2.

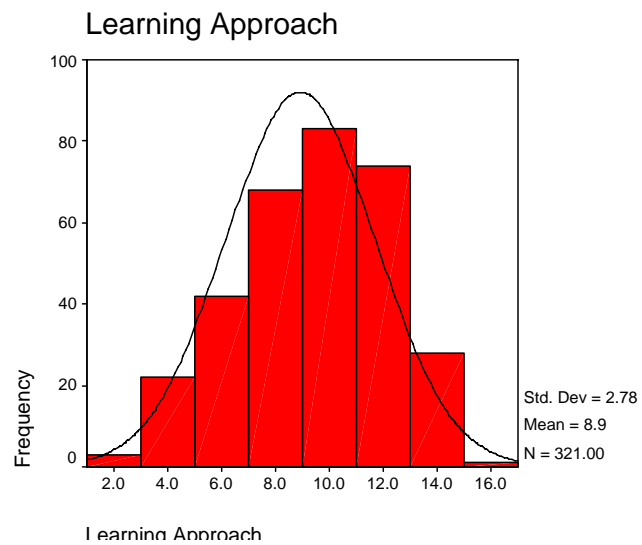
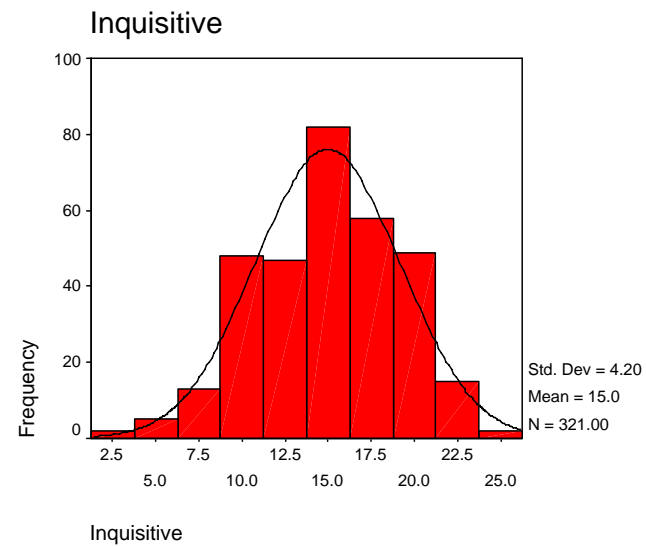
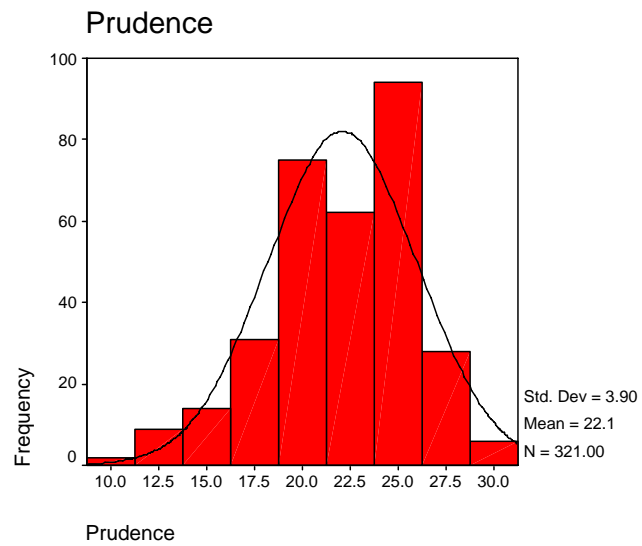
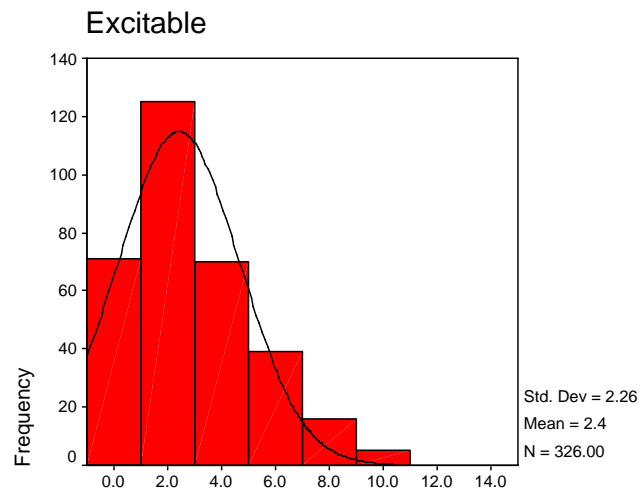
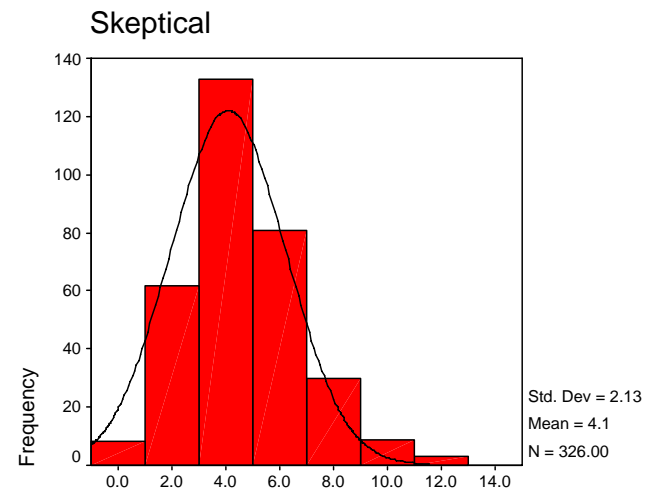


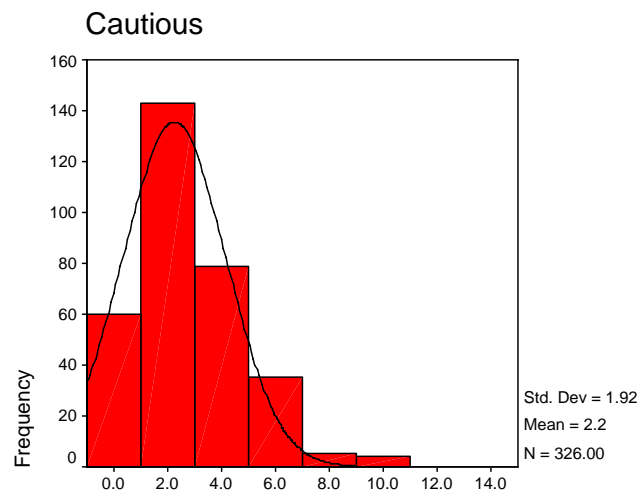
Figure 7 Continued. HPI Dimension Distributions for Sample 2.



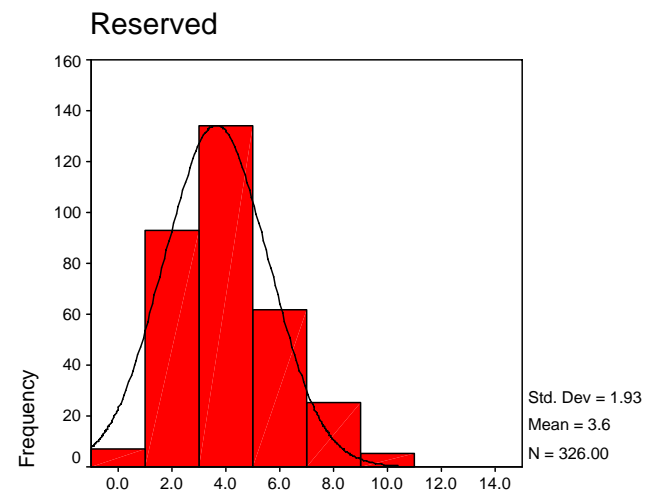
Excitable



Skeptical



Cautious



Reserved

Figure 8. HDS Dimension Distributions for Sample 2.

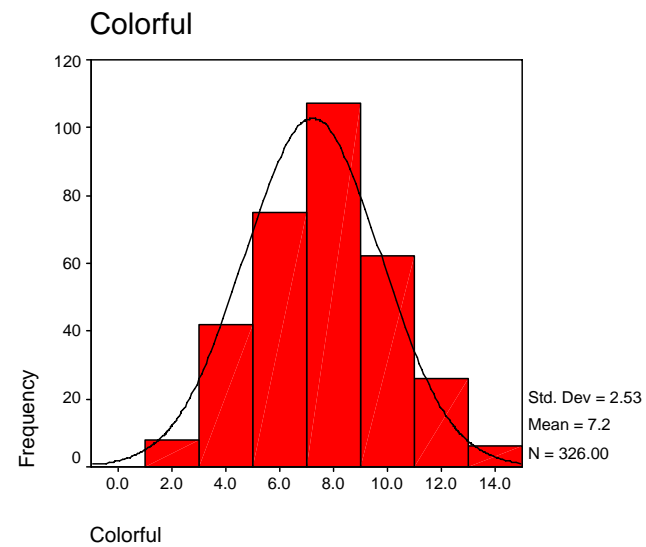
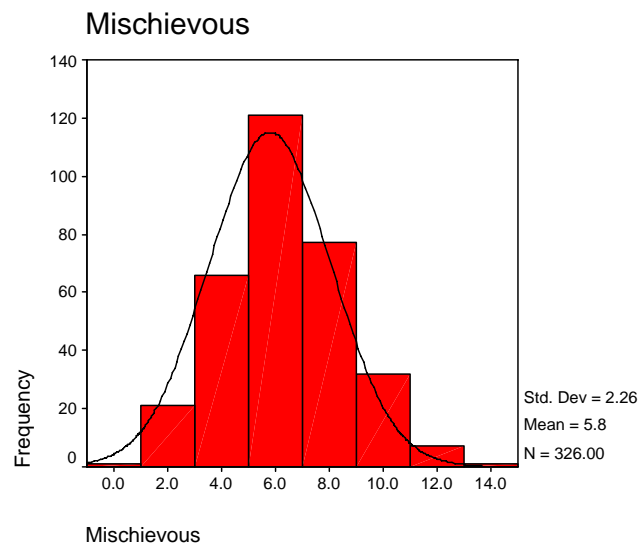
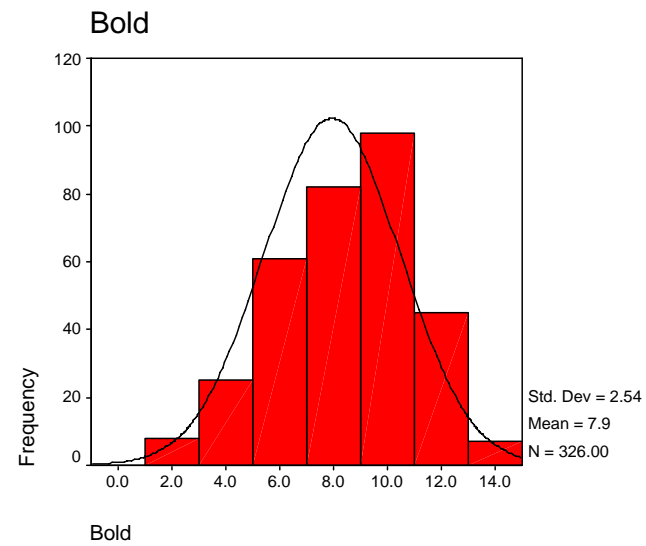
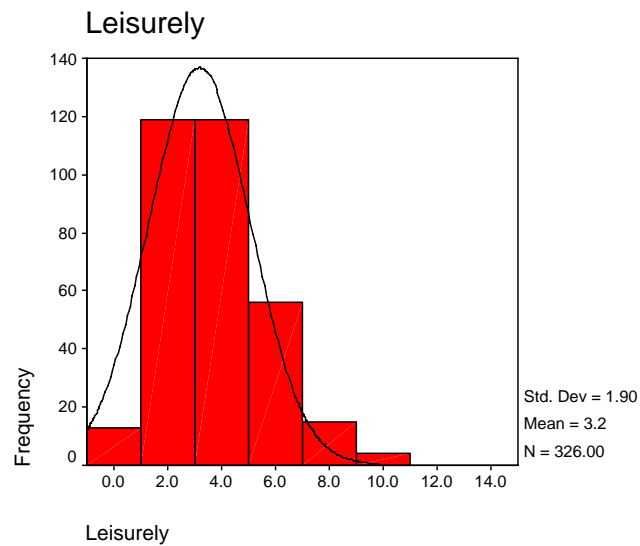


Figure 8 Continued. HDS Dimension Distributions for Sample 2.

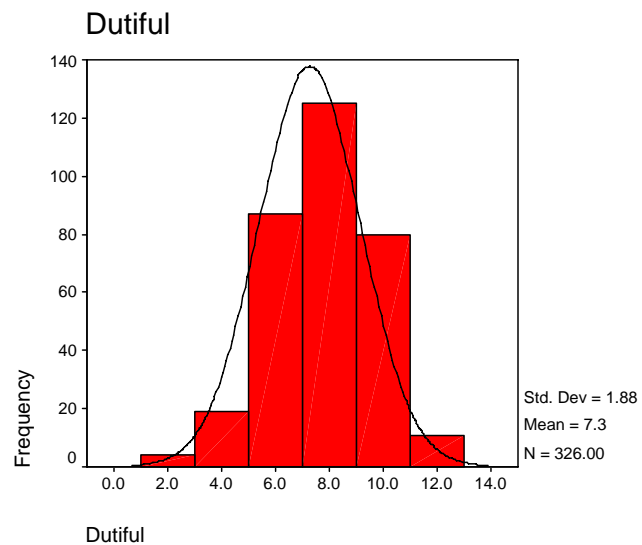
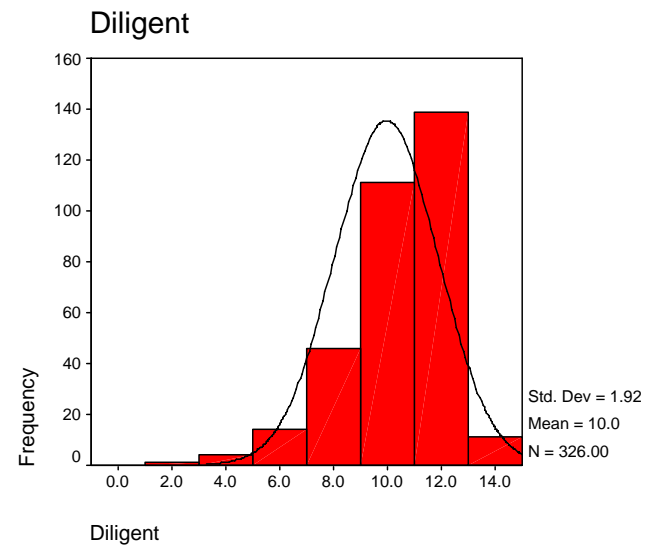
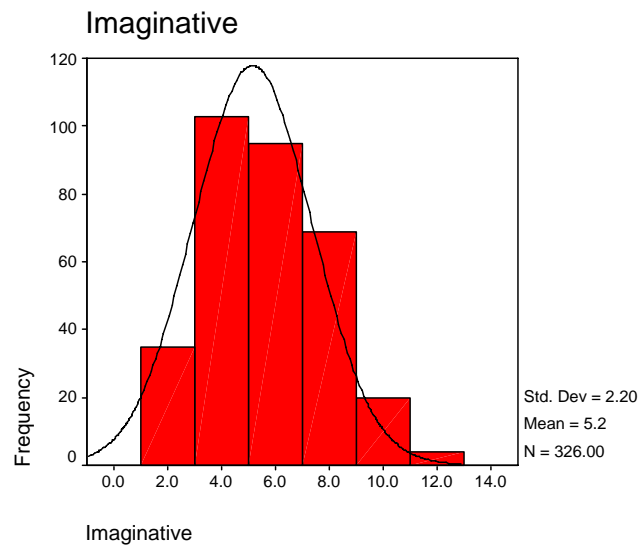


Figure 8 Continued. HDS Dimension Distributions for Sample 2.

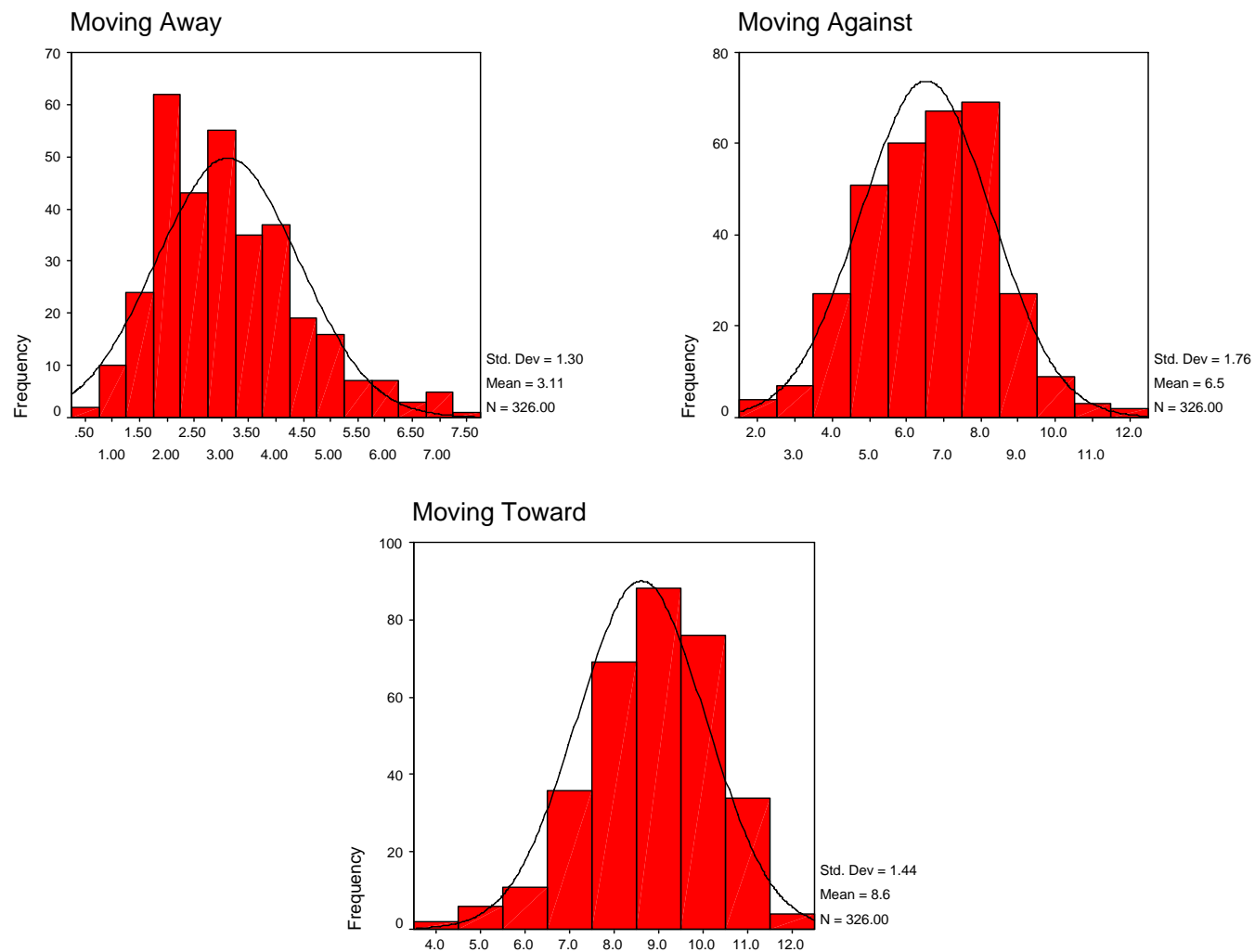
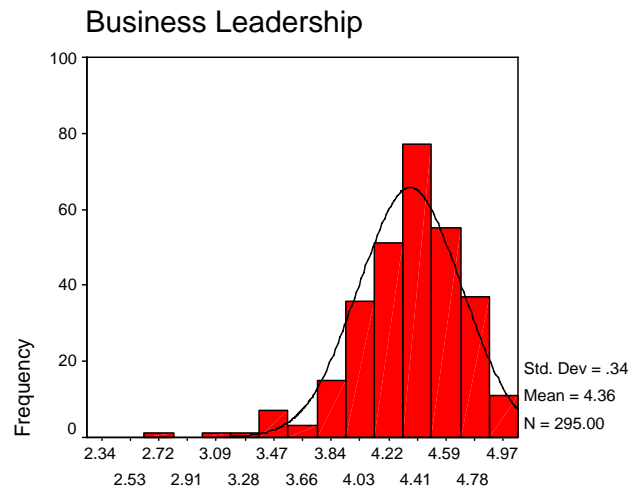
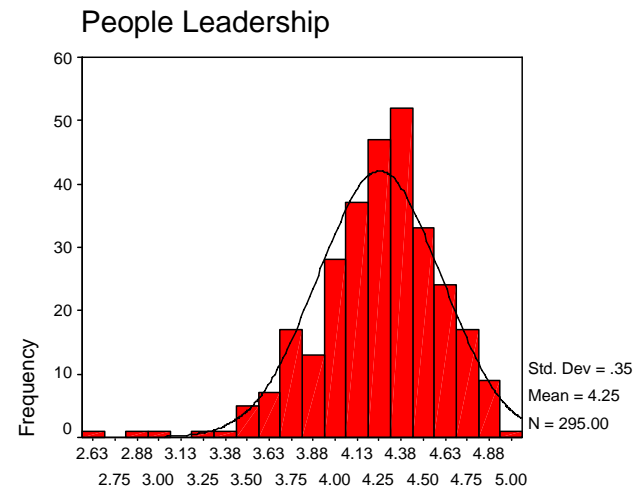


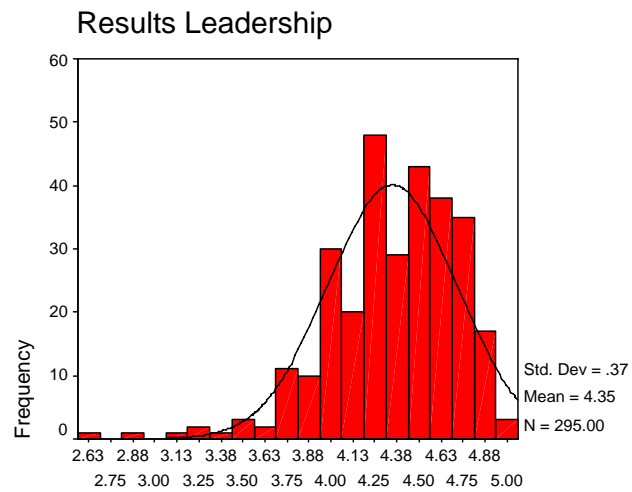
Figure 8 Continued. HDS Dimension Distributions for Sample 2.



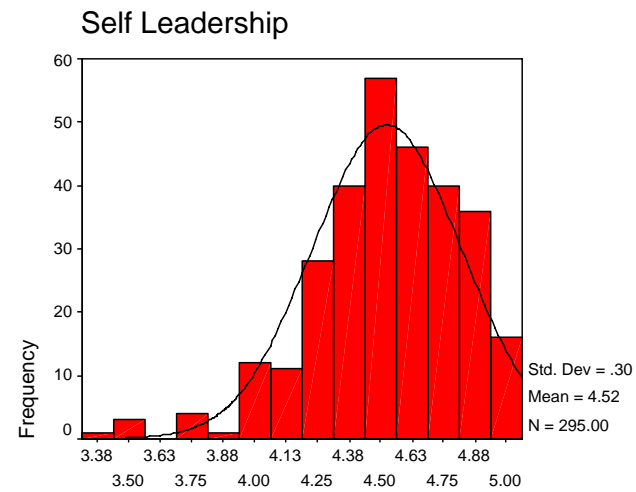
Business Leadership



People Leadership



Results Leadership



Self Leadership

Figure 9. Leadership Ratings Distribution for Sample 2.

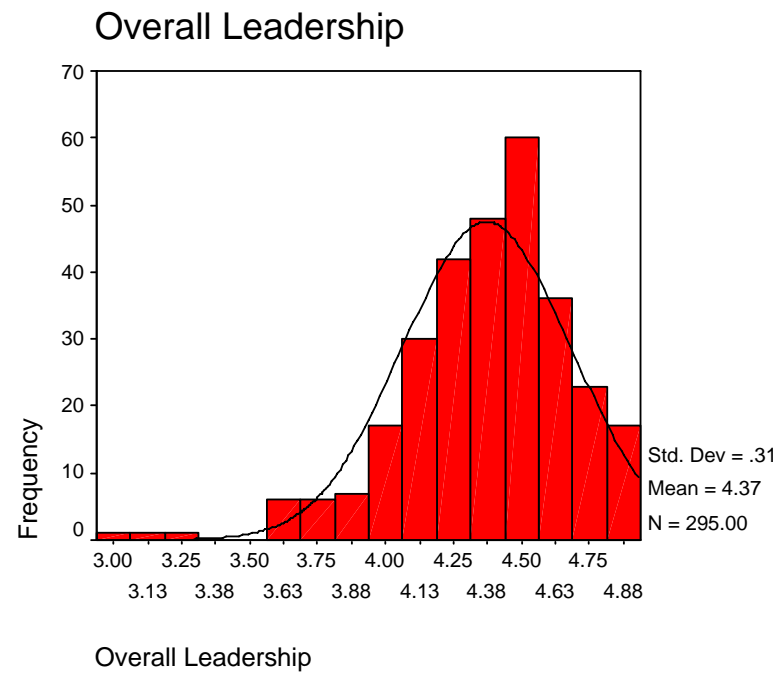
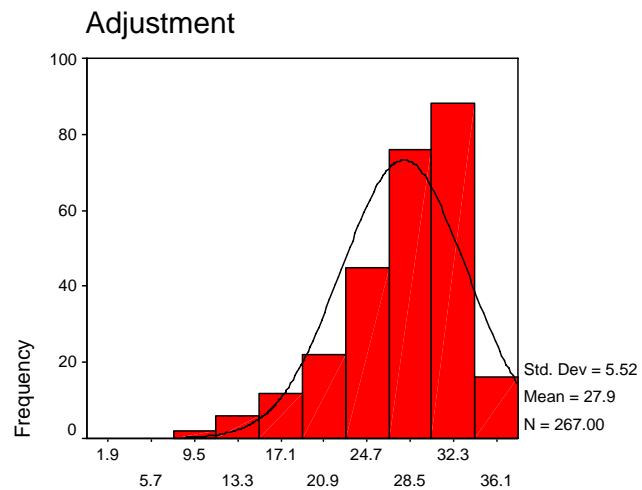
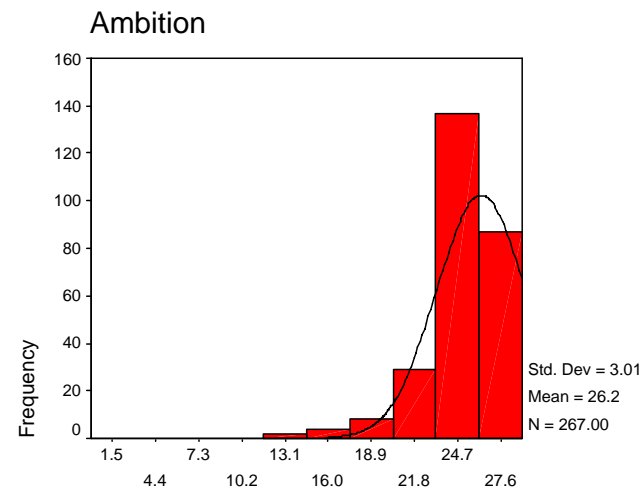


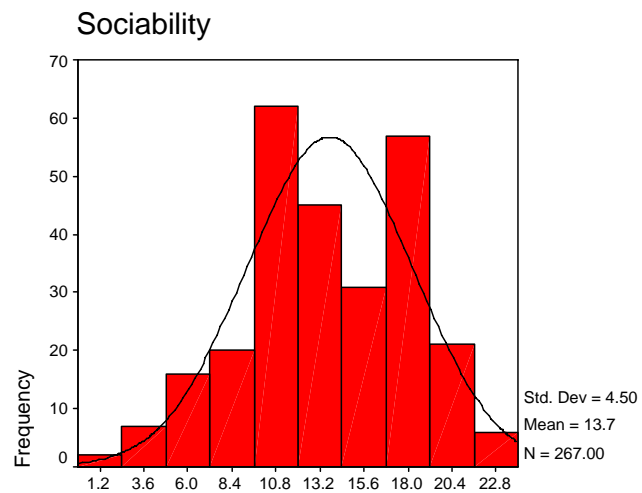
Figure 9 Continued. Leadership Ratings Distribution for Sample 2.



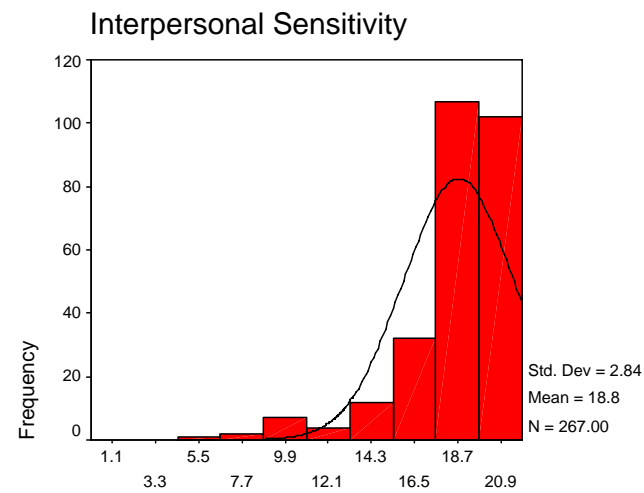
Adjustment



Ambition



Sociability



Interpersonal Sensitivity

Figure 10. HPI Dimension Distributions for Sample 3.

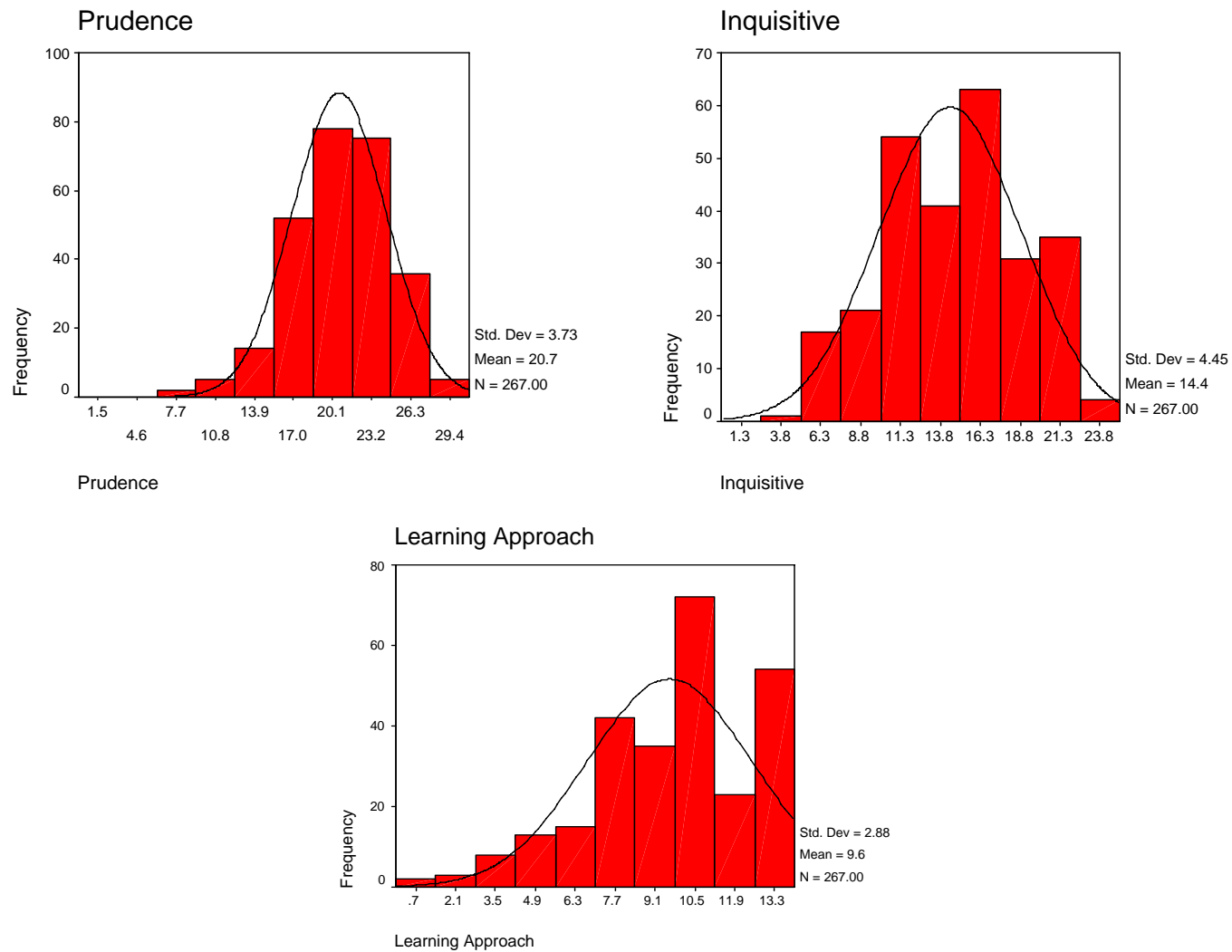


Figure 10 Continued. HPI Dimension Distributions for Sample 3.

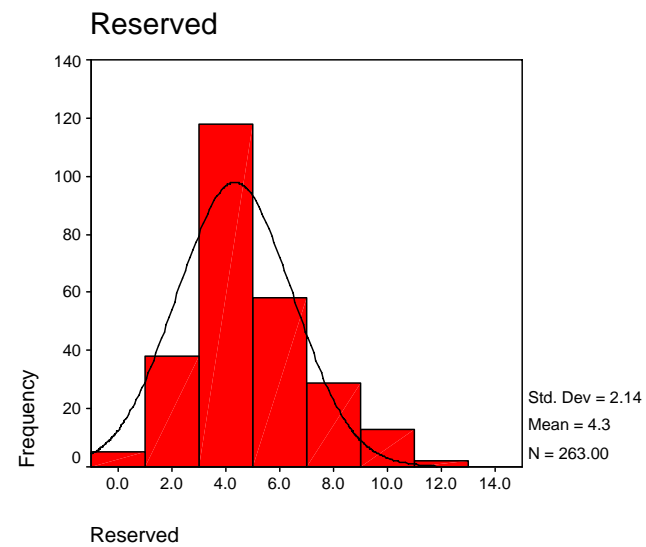
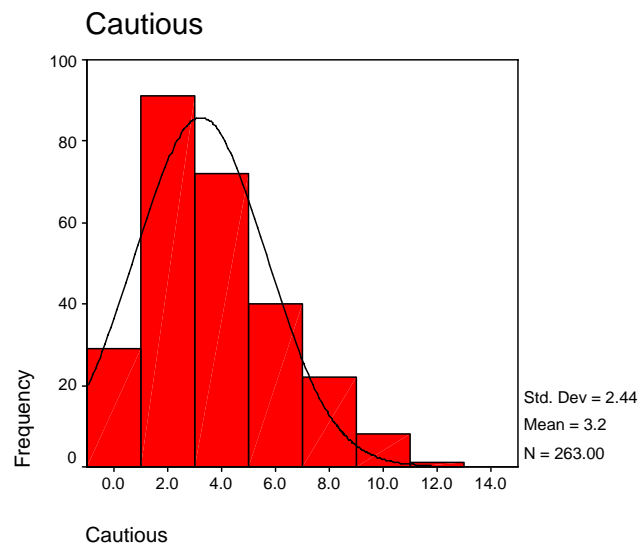
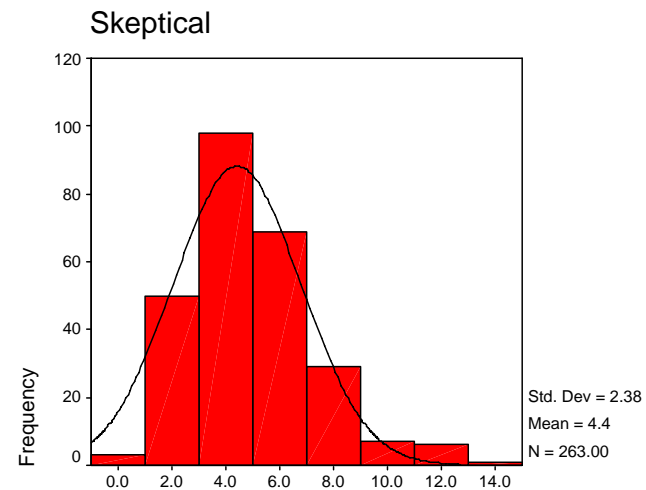
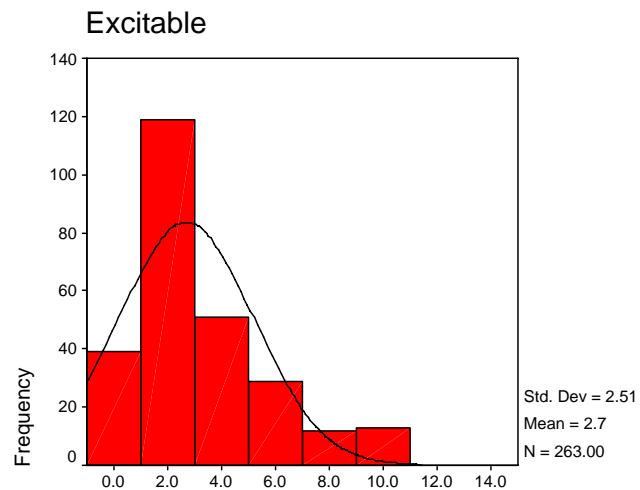


Figure 11. HDS Dimension Distributions for Sample 3.

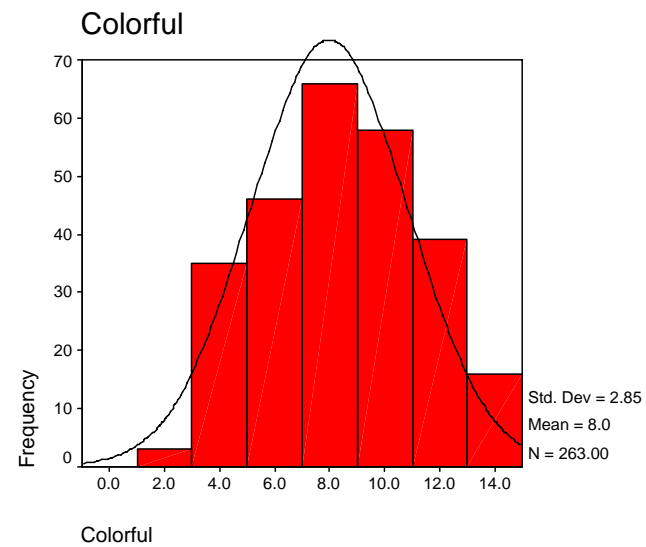
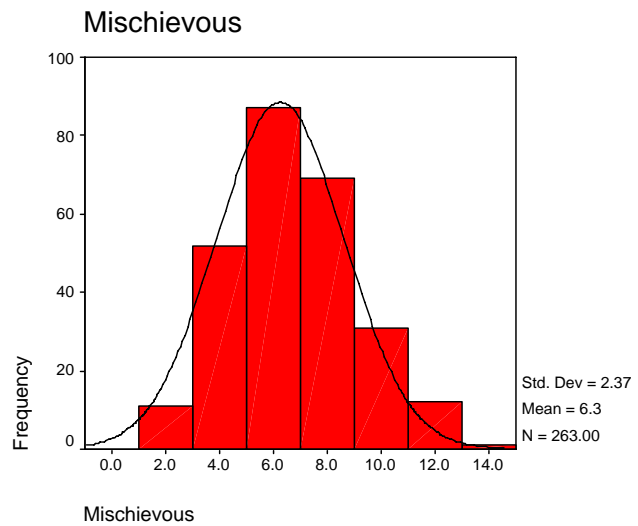
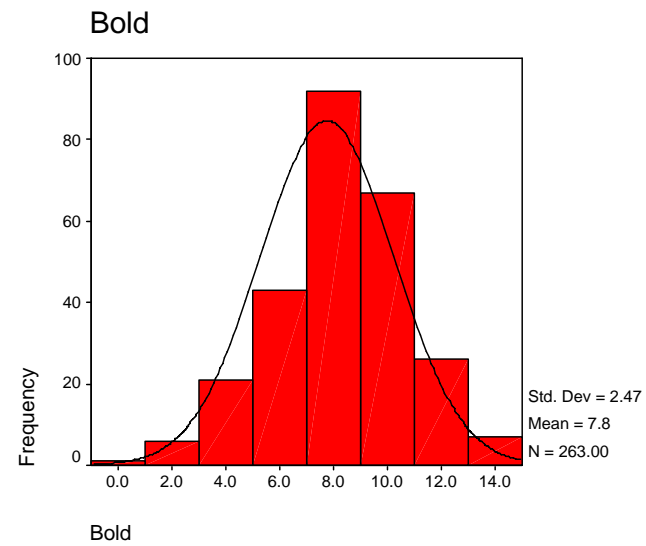
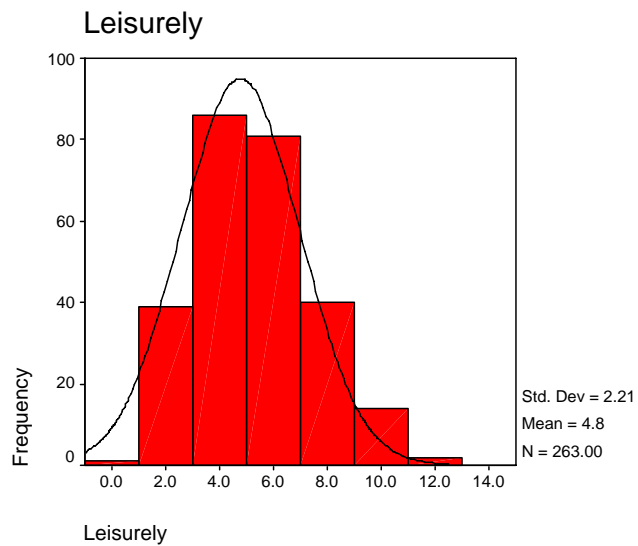


Figure 11 Continued. HDS Dimension Distributions for Sample 3.

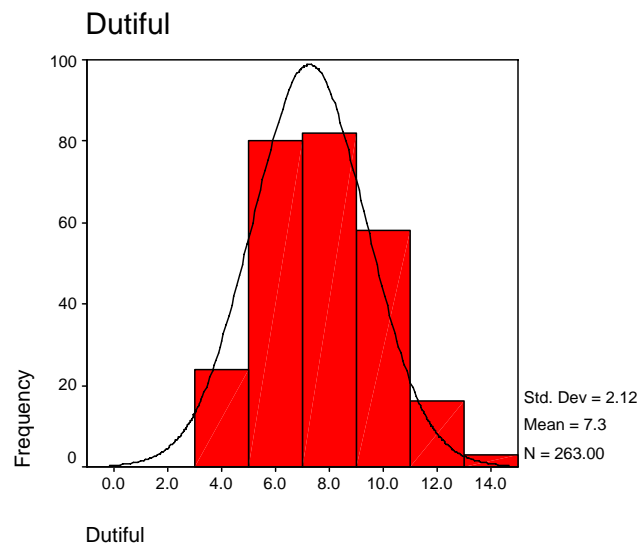
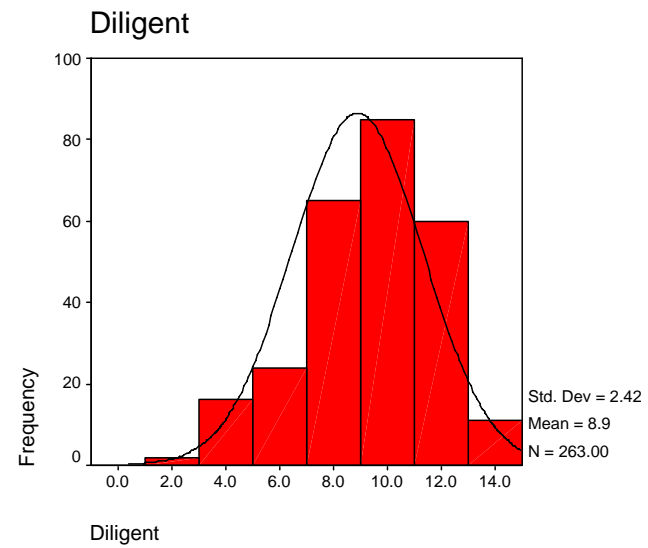
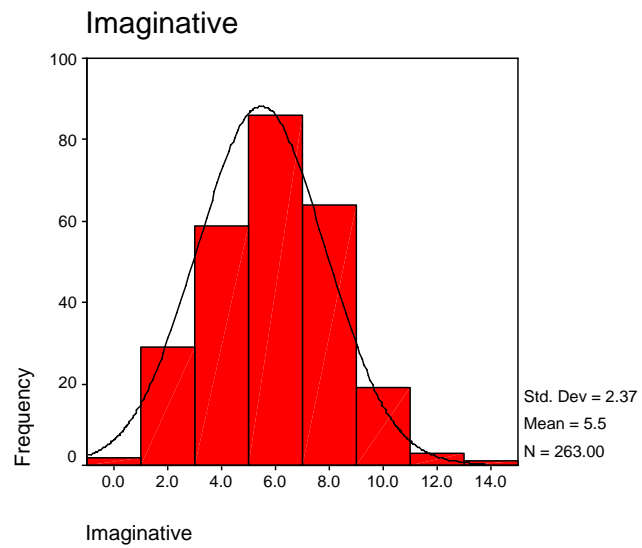


Figure 11 Continued. HDS Dimension Distributions for Sample 3.

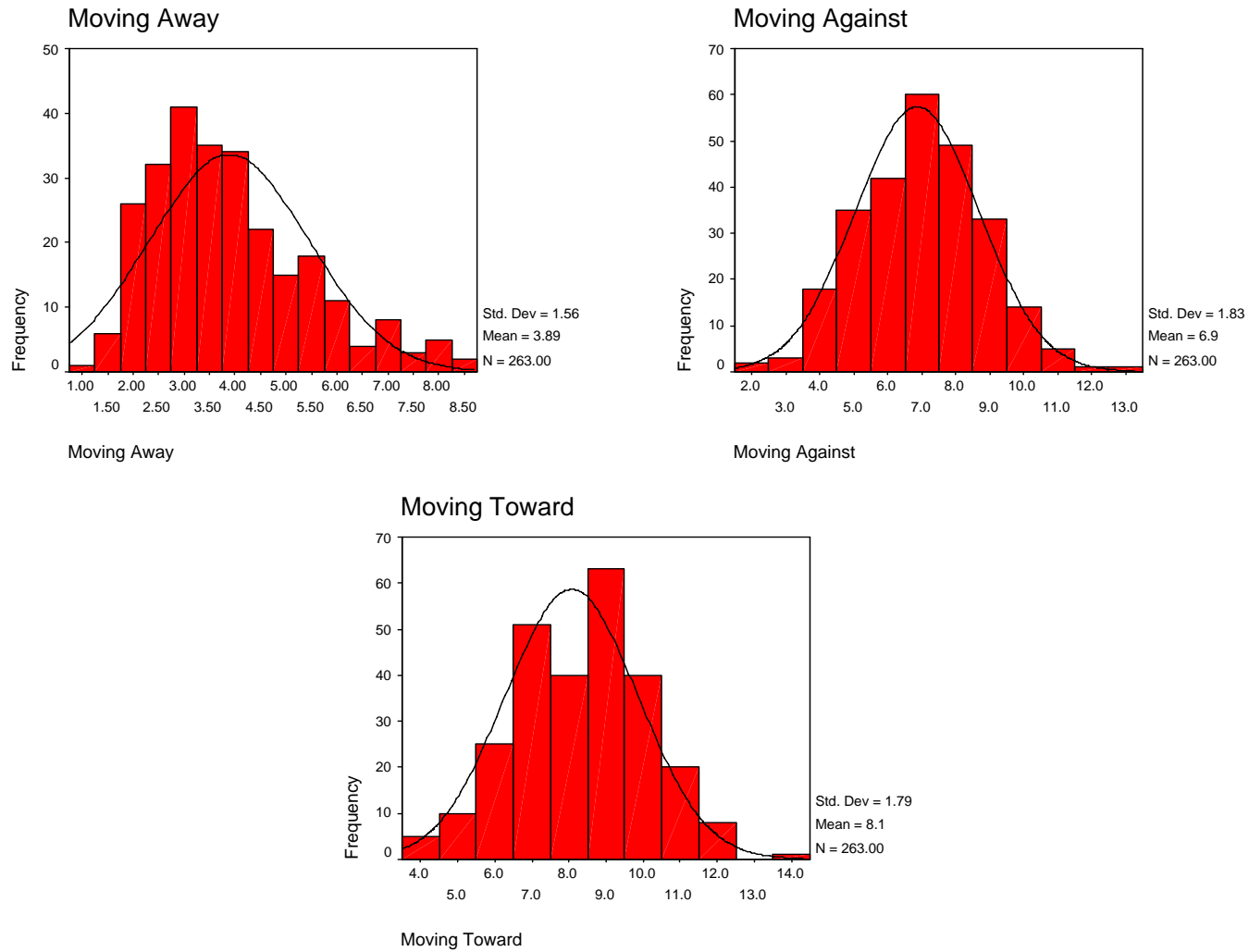


Figure 11 Continued. HDS Dimension Distributions for Sample 3.

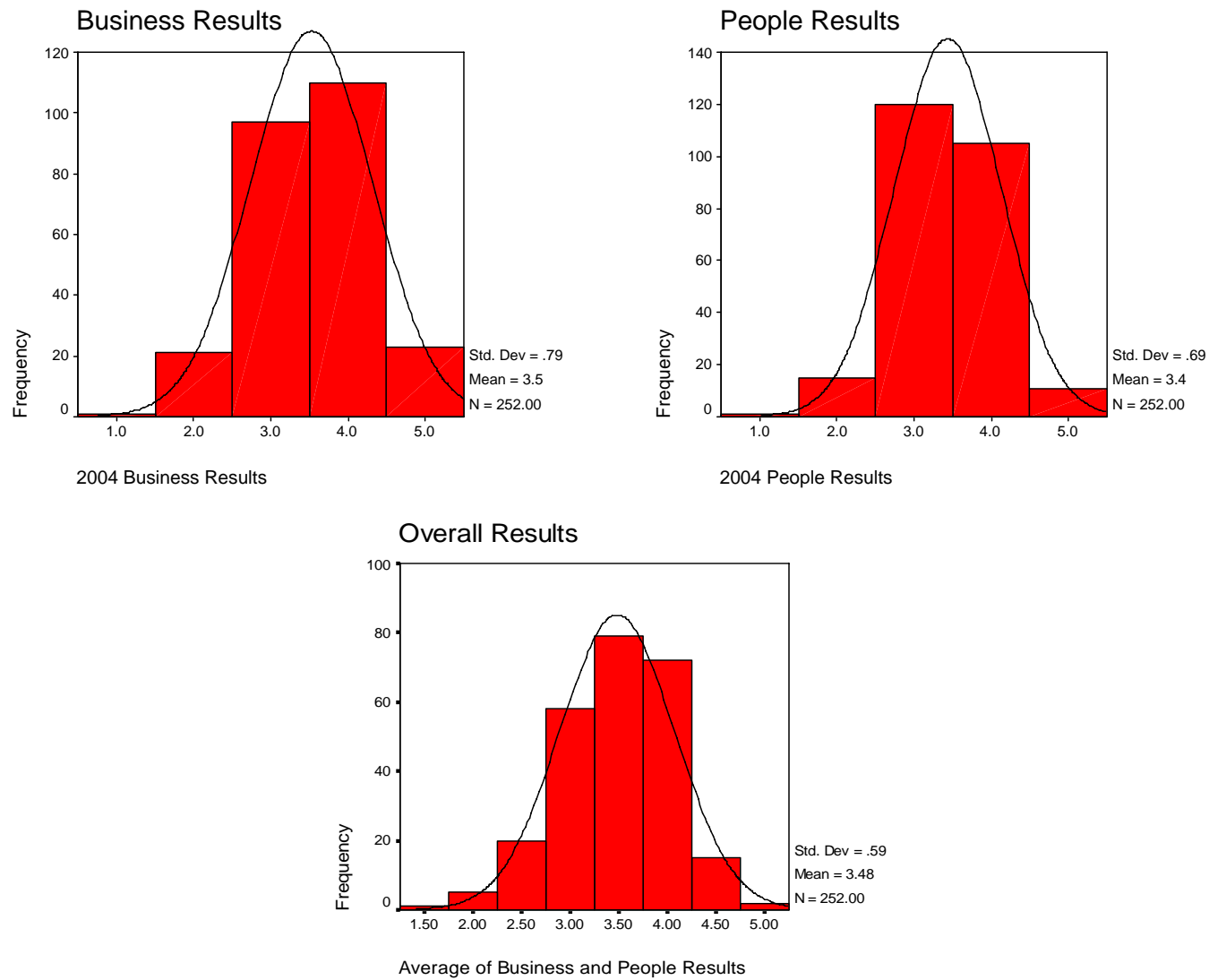


Figure 12. Leadership Rating Distributions for Sample 3.

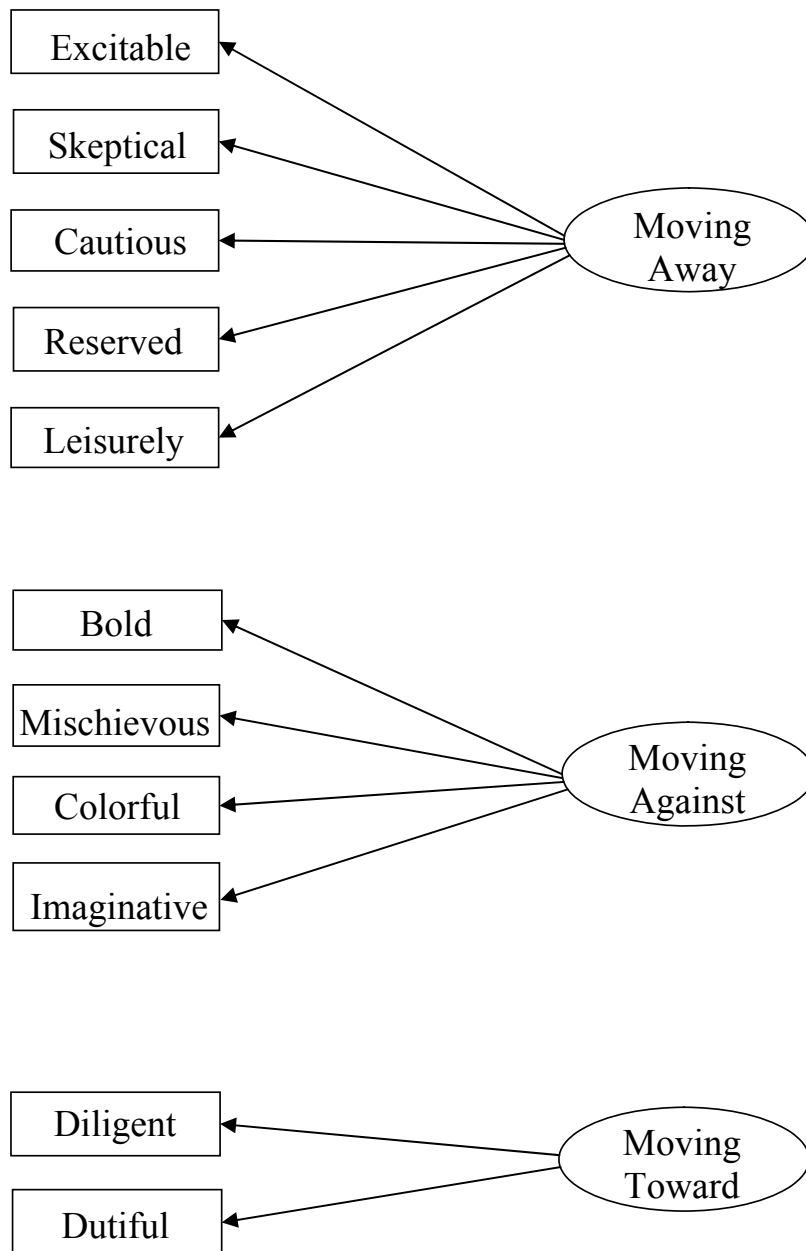
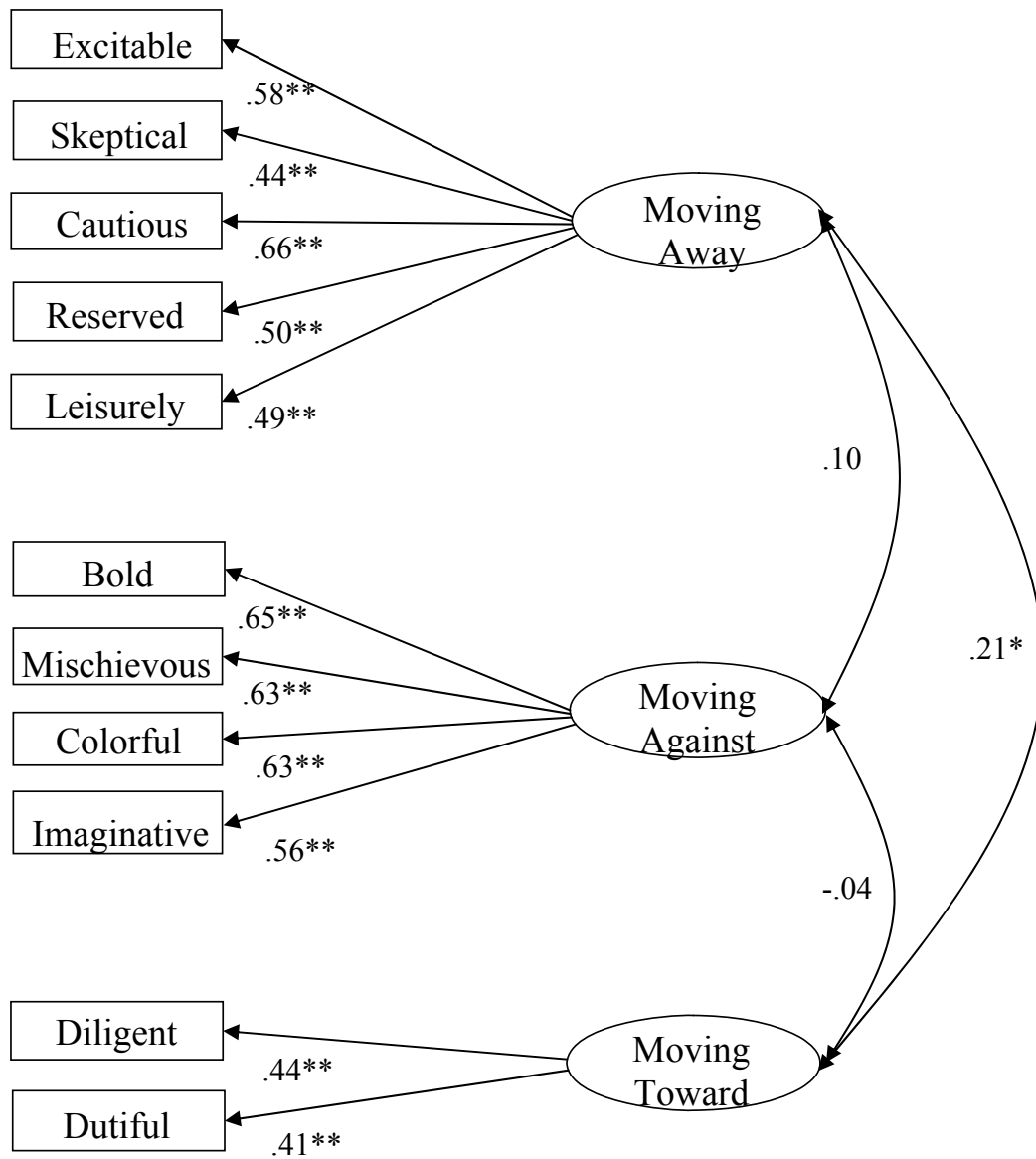
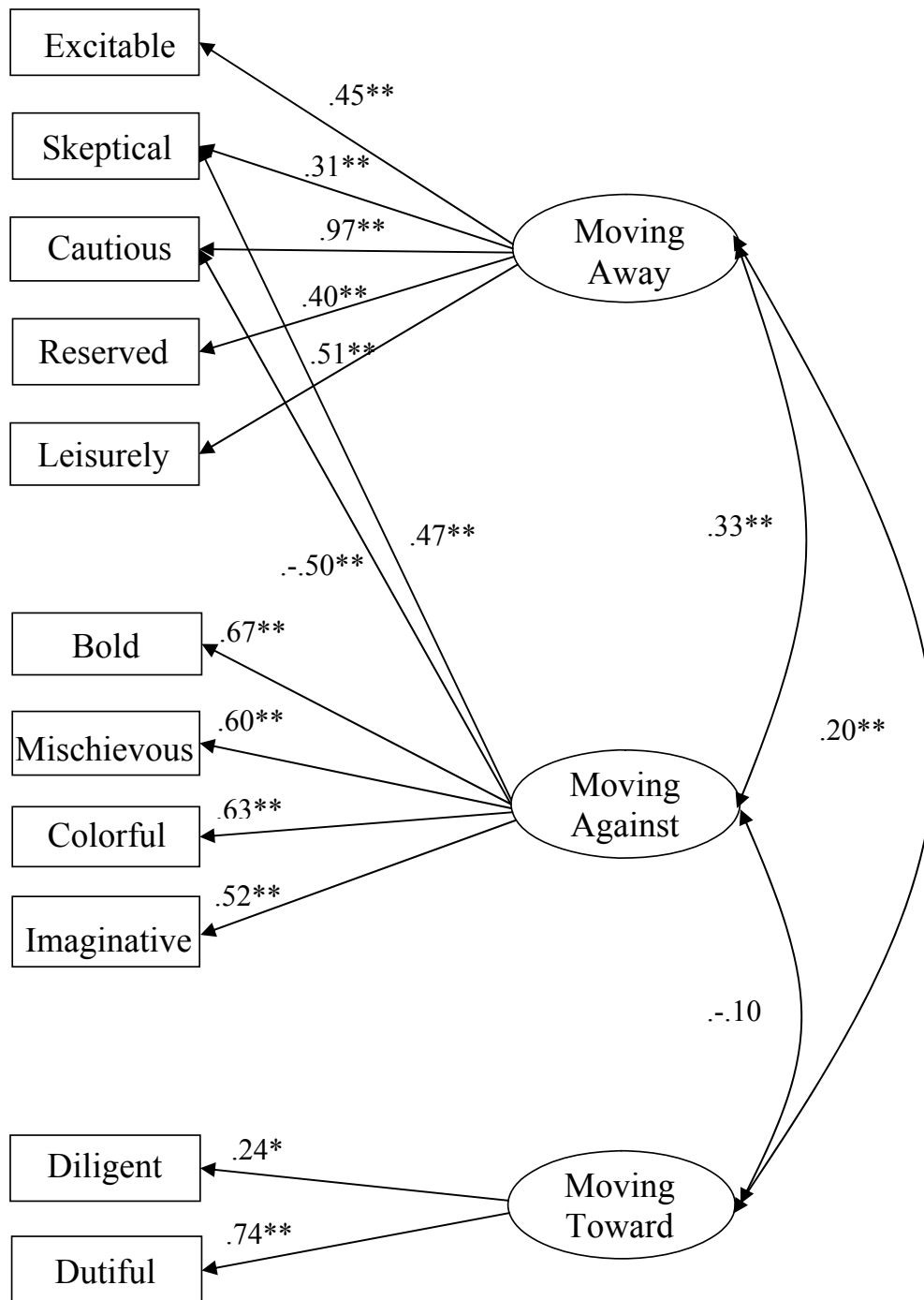


Figure 13a. Measurement model for the higher-order factors of the HDS.



$\chi^2(41) = 381.95, p < .01$
 RMSEA = .119, RMR = .56, SRMR = .10, GFI = .89, AGFI = .83

Figure 13b. Standardized path coefficients and model fit statistics for higher-order factors of the HDS.



$\chi^2(36) = 137.89, p < .01$

RMSEA = .069, RMR = .30, SRMR = .06, GFI = .96, AGFI = .93

Figure 13c. Standardized path coefficients and model fit statistics for higher-order factors of the HDS. Model incorporates two cross-loadings for primary scales (Skeptical and Cautious) as well as three free error covariances (Excitable-Skeptical, Colorful-Skeptical, and Colorful-Reserved; all $p < .01$).

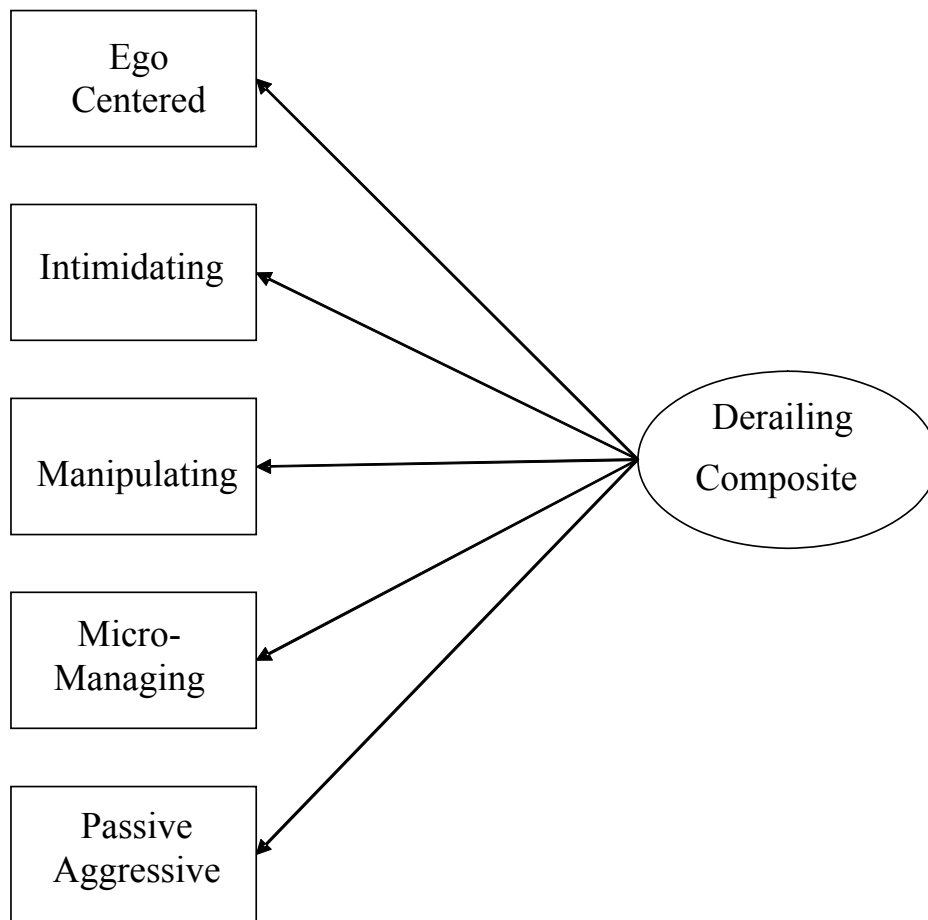
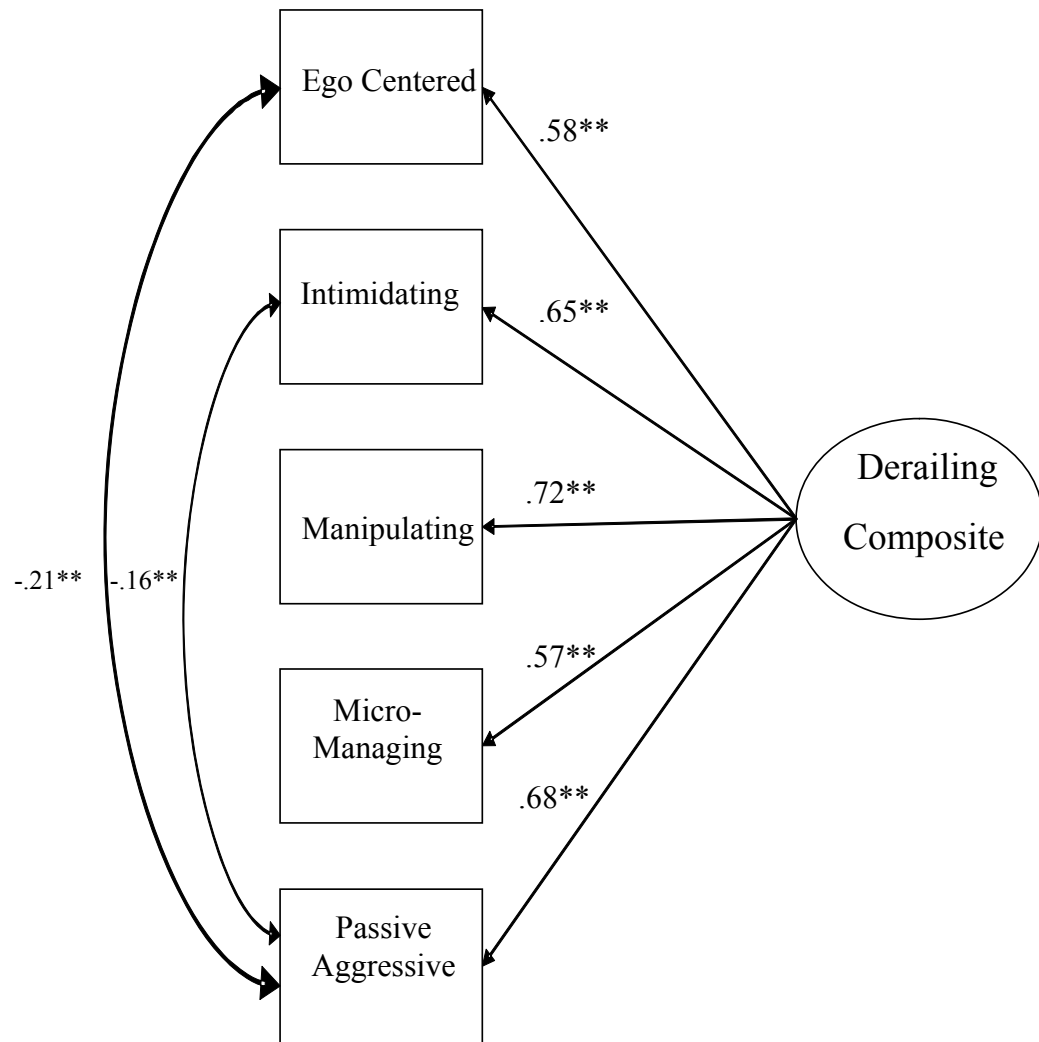


Figure 14a. Measurement model for the derailing composite scale.



$\chi^2(3) = 6.71, p > .05$
 RMSEA = .031, RMR = .008, SRMR = .012

Figure 14b. Standardized path coefficients and model fit statistics for derailing composite.

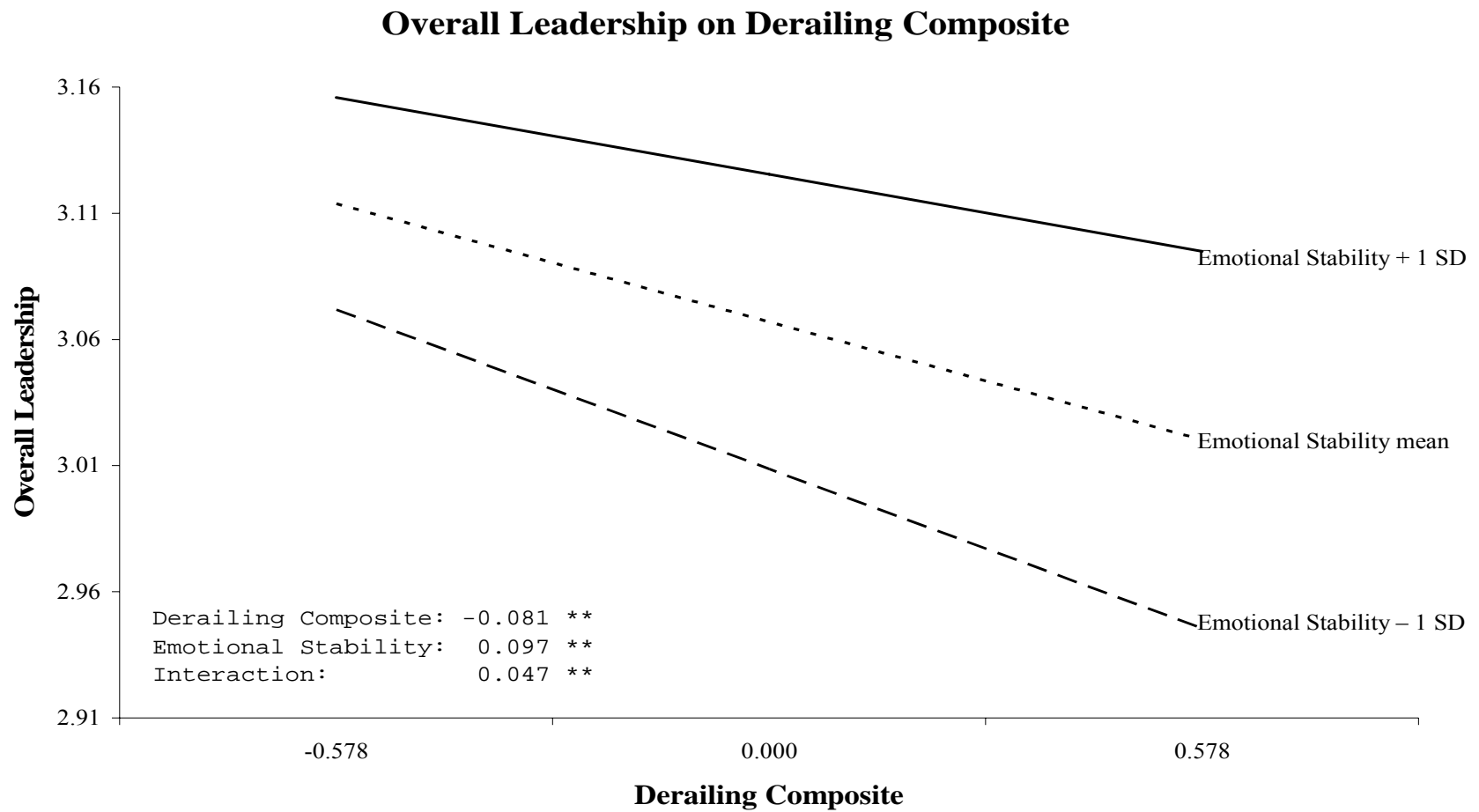


Figure 15. Interaction between derailing composite and emotional stability for overall leadership.

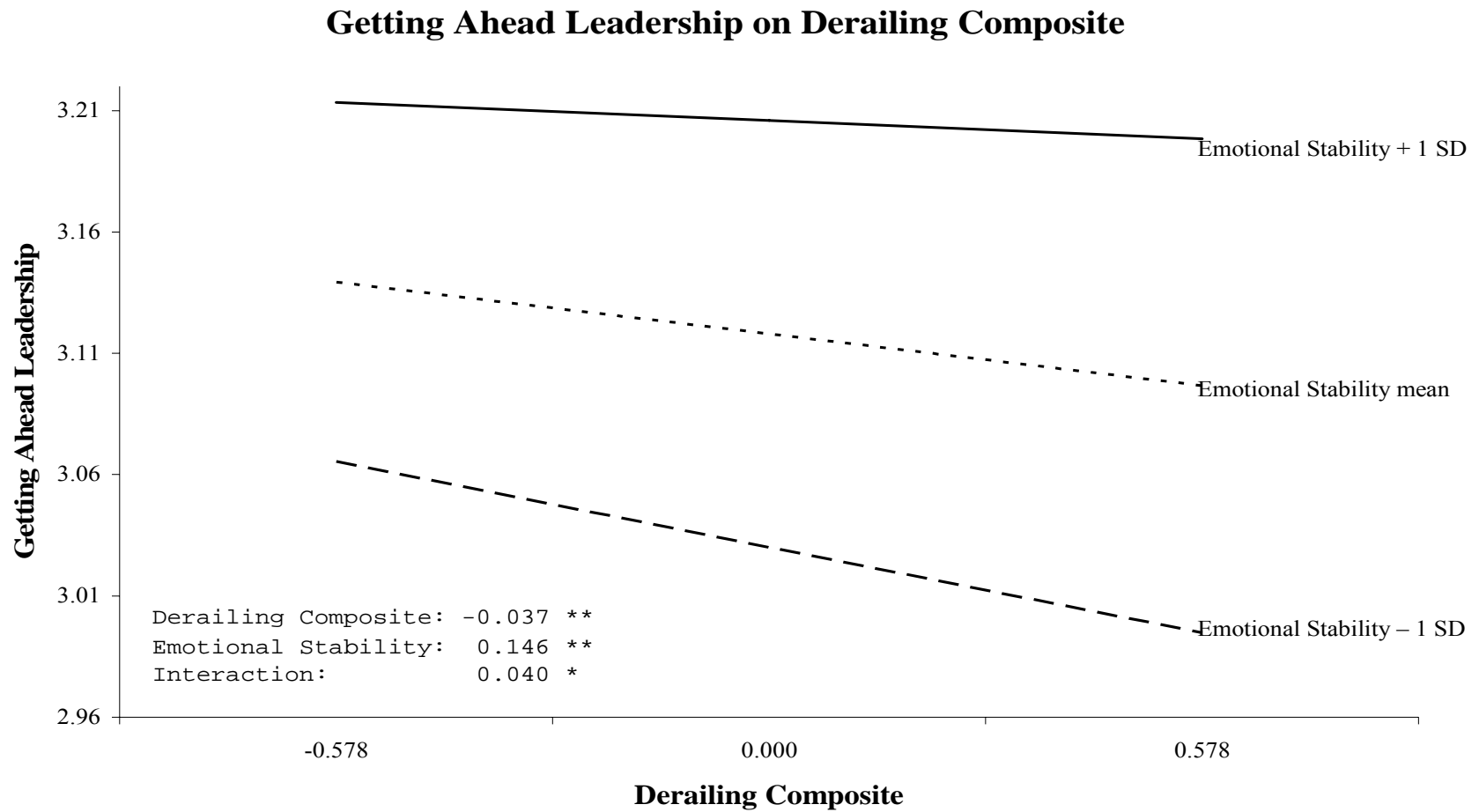


Figure 16. Interaction between derailing composite and emotional stability for getting ahead leadership.

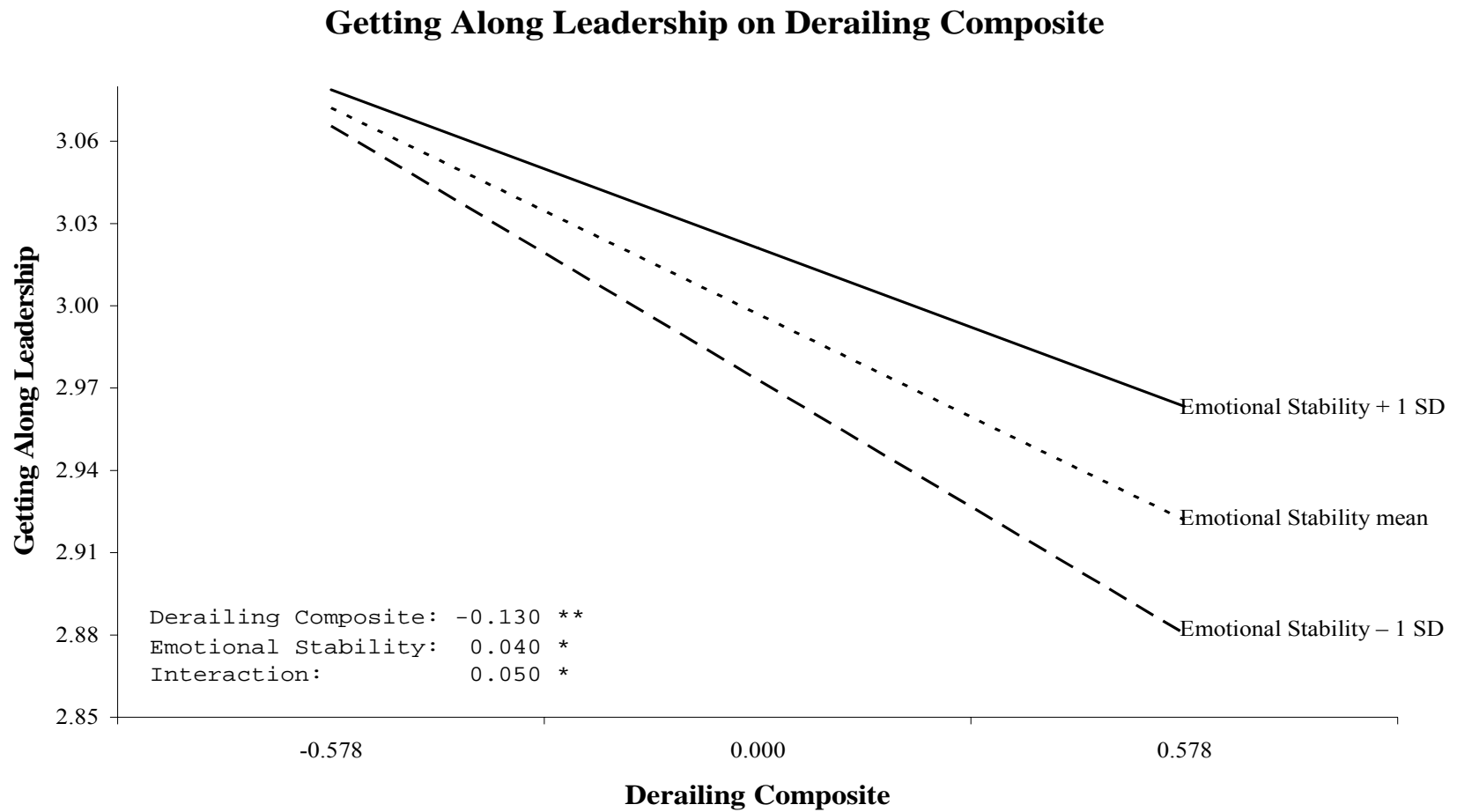


Figure 17. Interaction between derailing composite and emotional stability for getting along leadership.

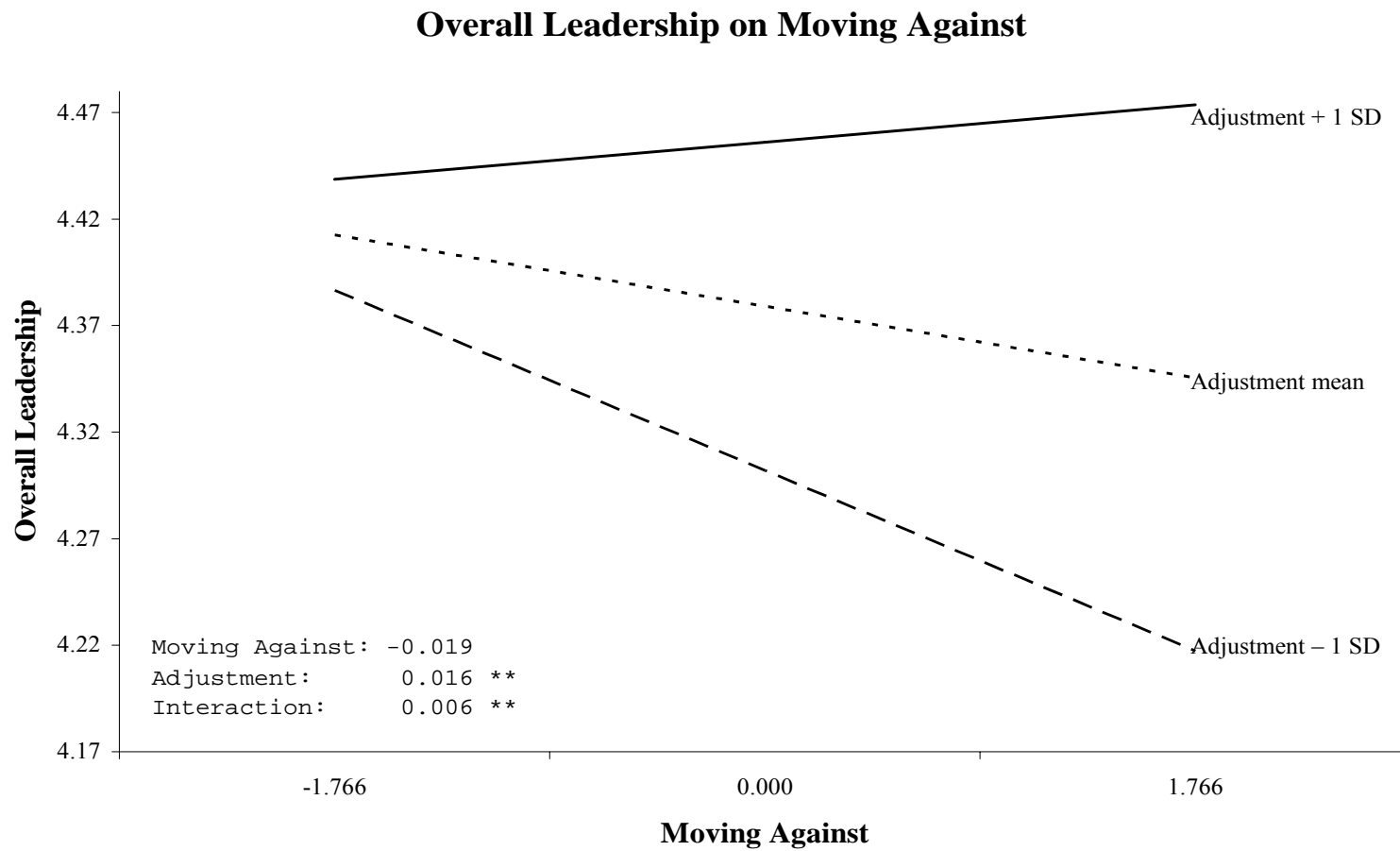


Figure 18. Interaction between moving against composite and adjustment for overall leadership.

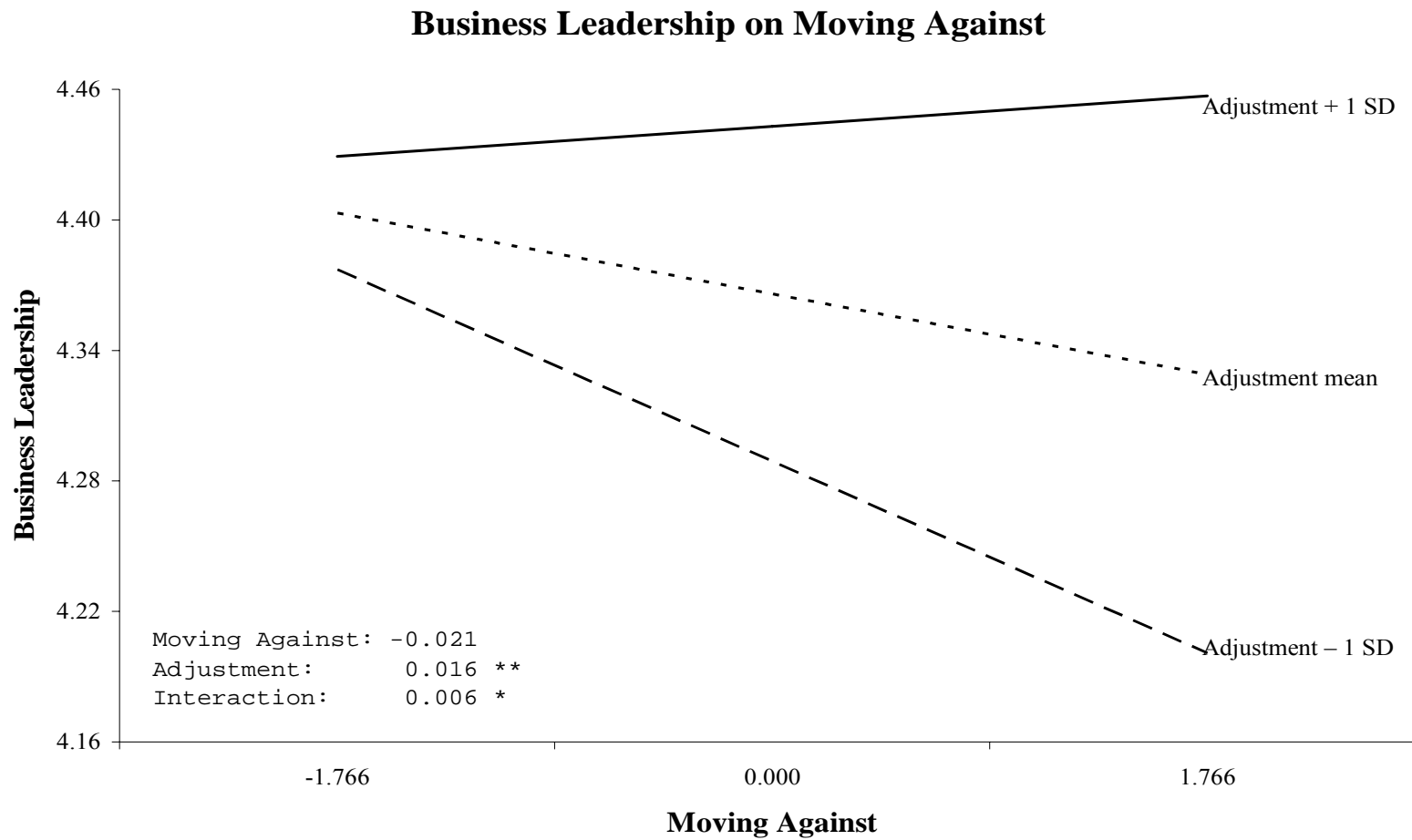


Figure 19. Interaction between moving against composite and adjustment for business leadership.

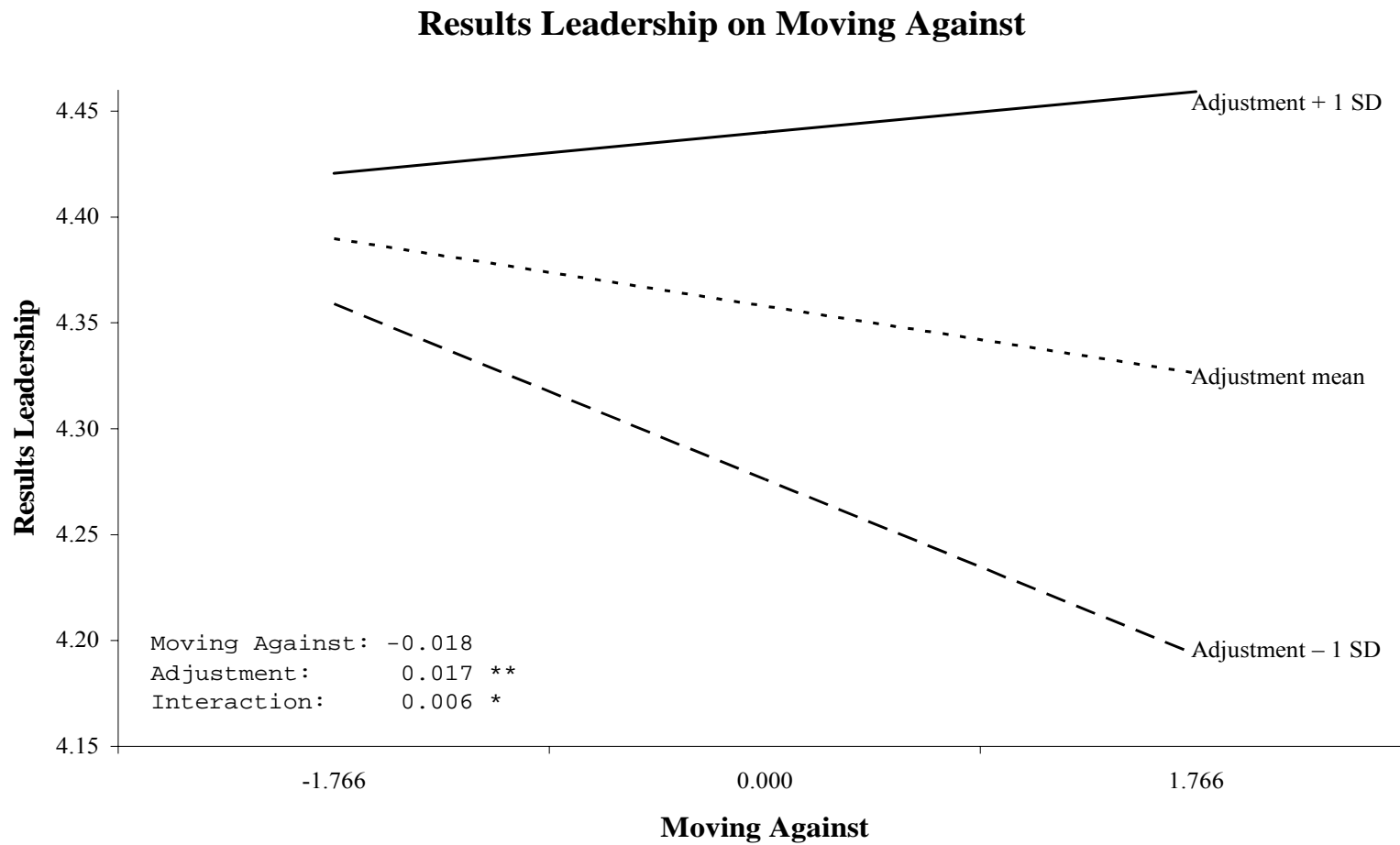


Figure 20. Interaction between moving against composite and adjustment for results leadership.

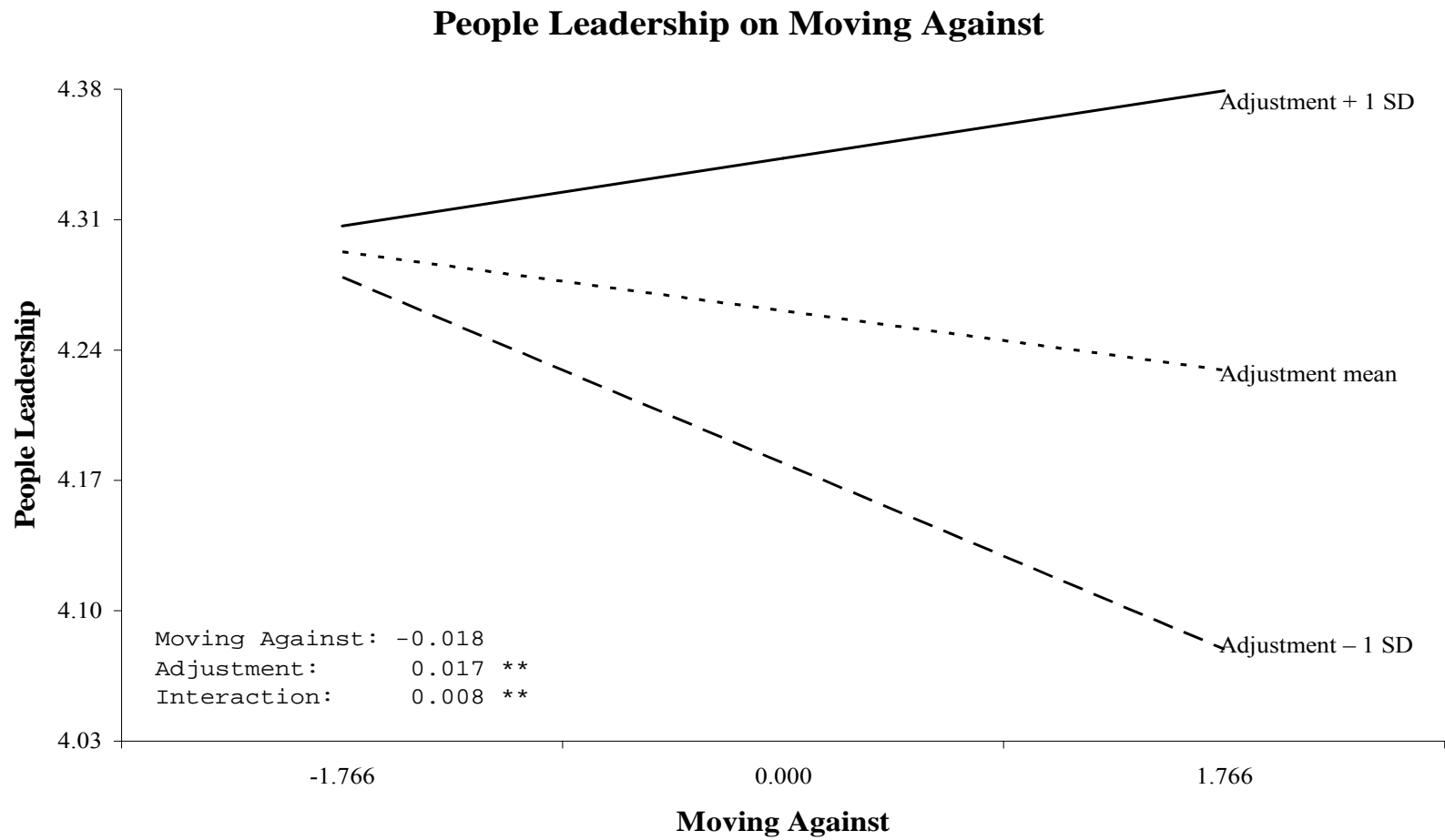


Figure 21. Interaction between moving against composite and adjustment for people leadership.

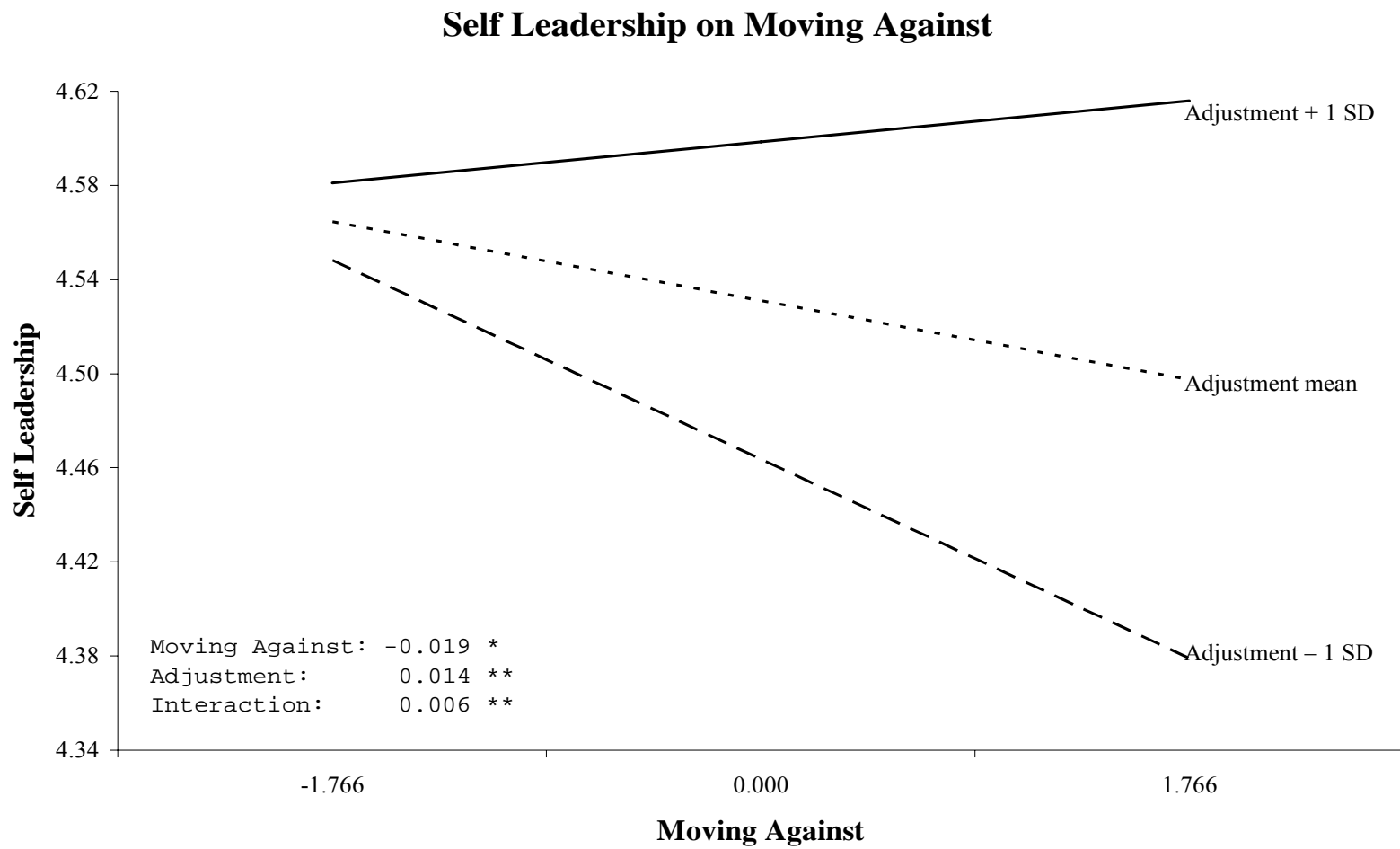


Figure 22. Interaction between moving against composite and adjustment for self leadership.

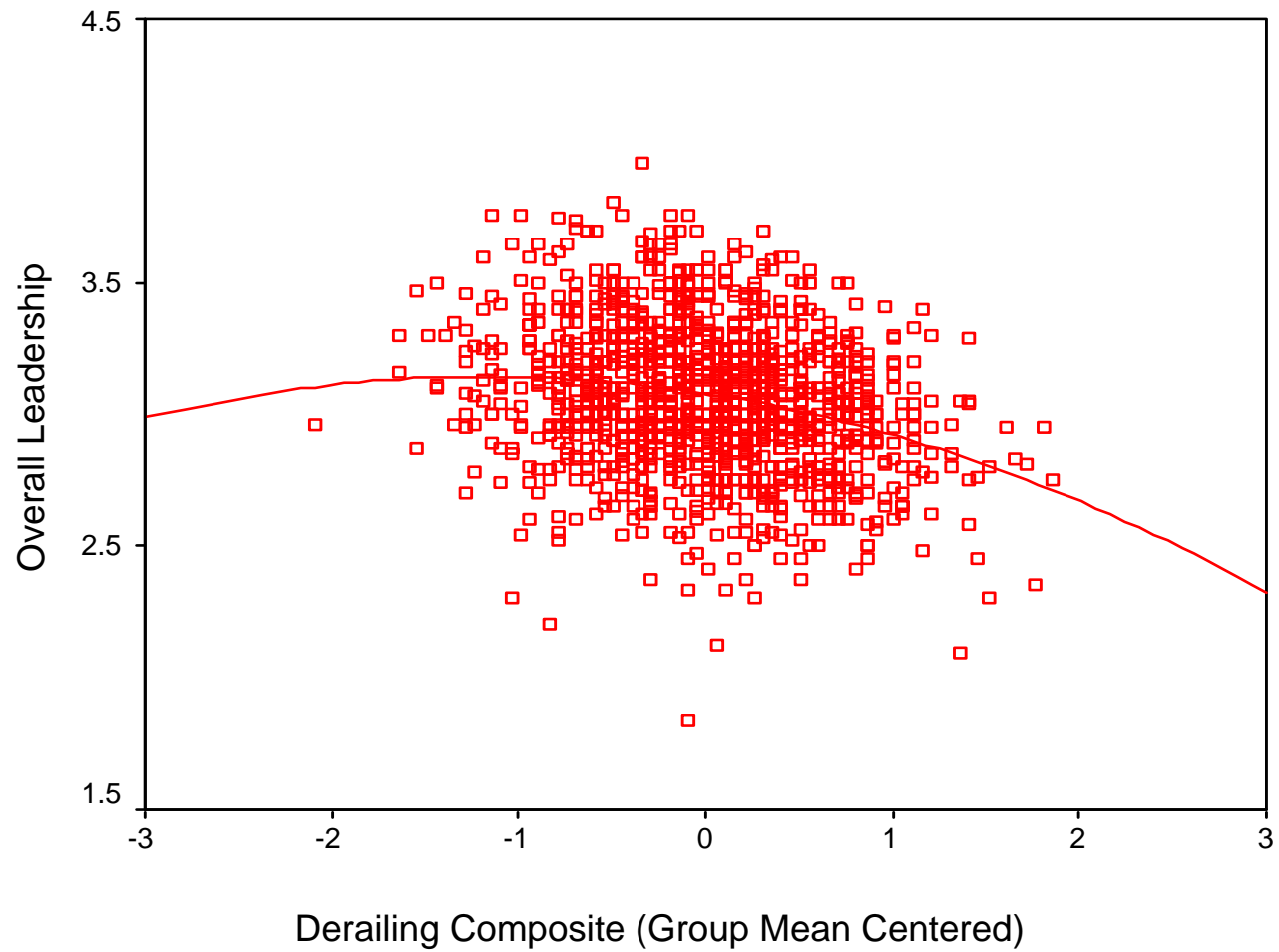


Figure 23. Curvilinear relationship between derailing composite and overall leadership (with quadratic trend line).

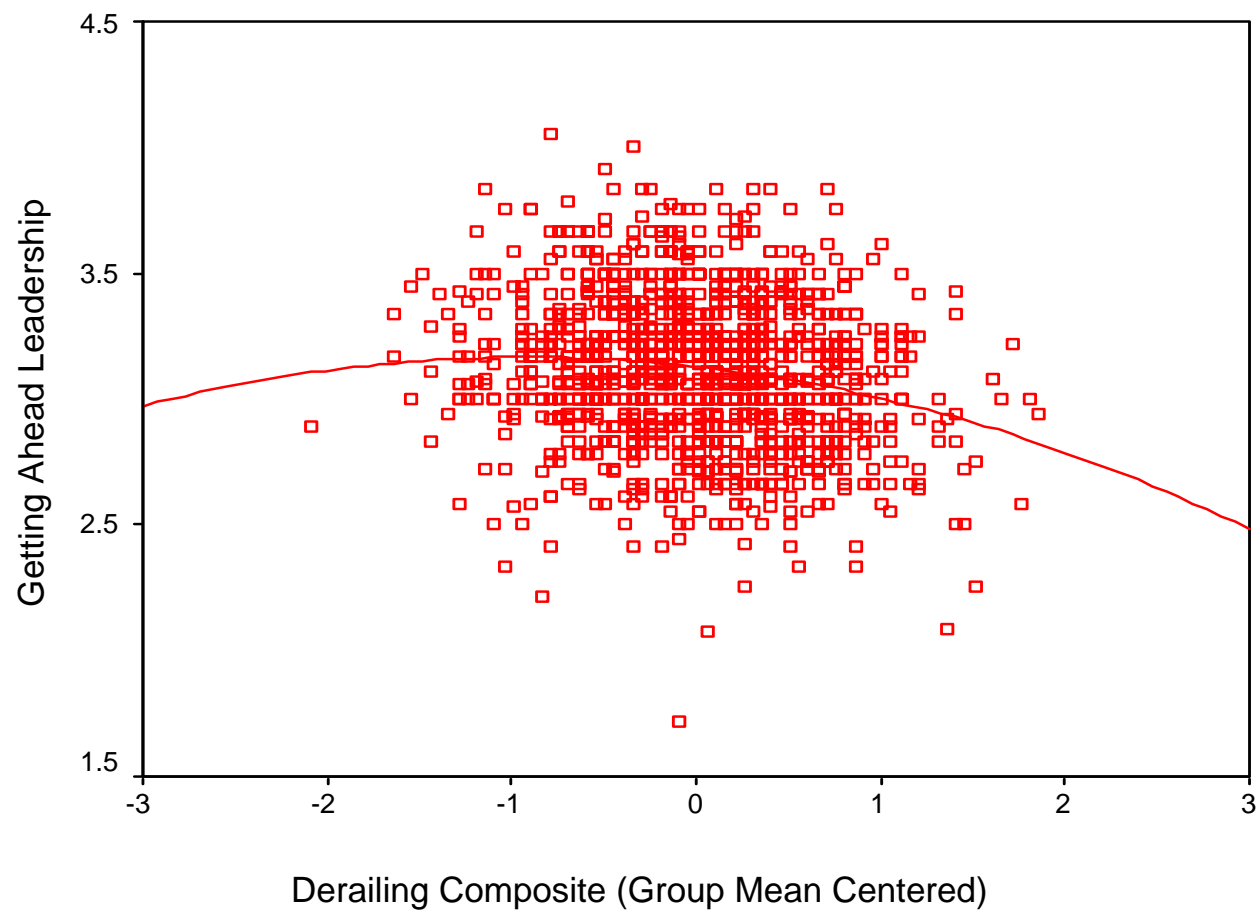


Figure 24. Curvilinear relationship between derailing composite and getting ahead leadership (with quadratic trend line).

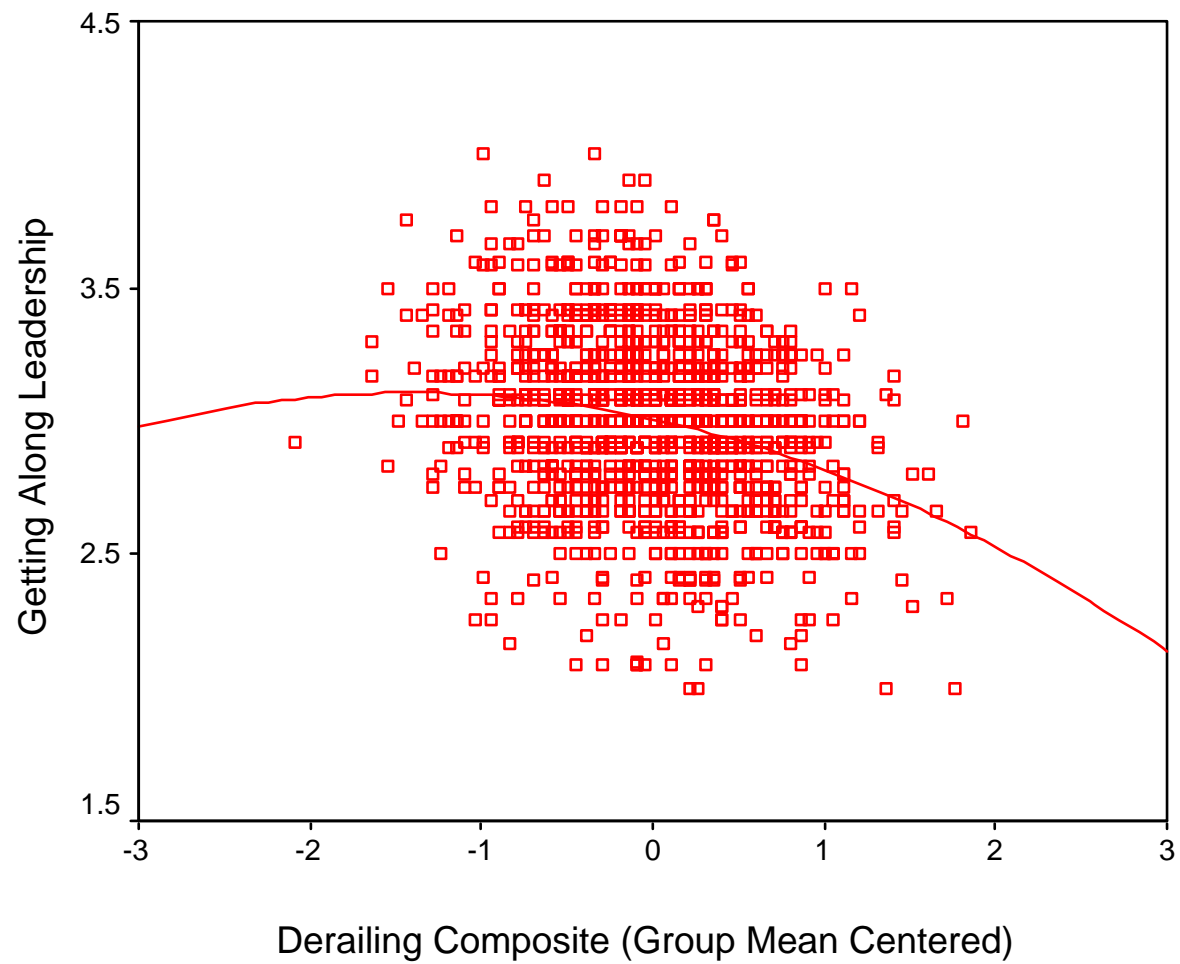


Figure 25. Curvilinear relationship between derailing composite and getting along leadership (with quadratic trend line).

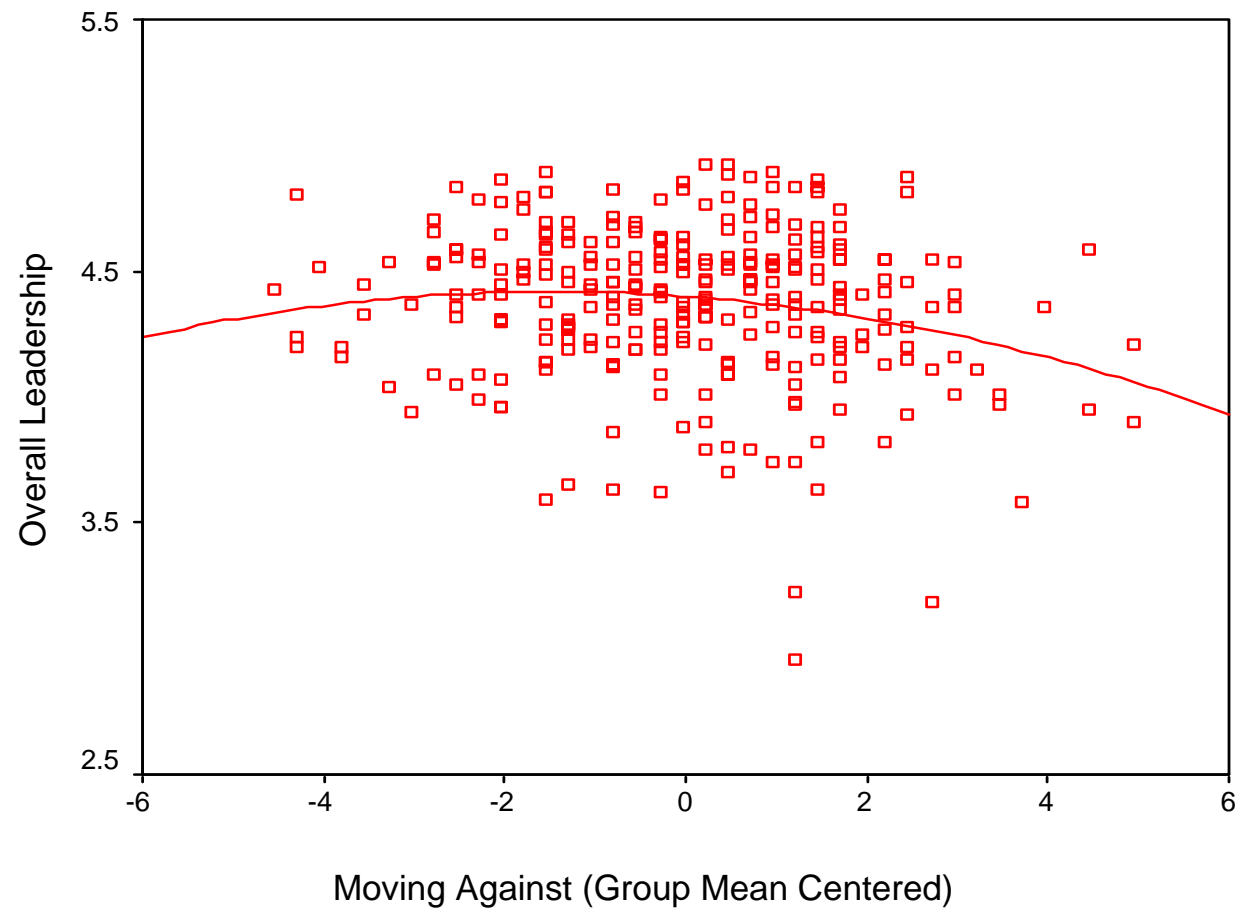


Figure 26. Curvilinear relationship between moving against composite and overall leadership (with quadratic trend line).

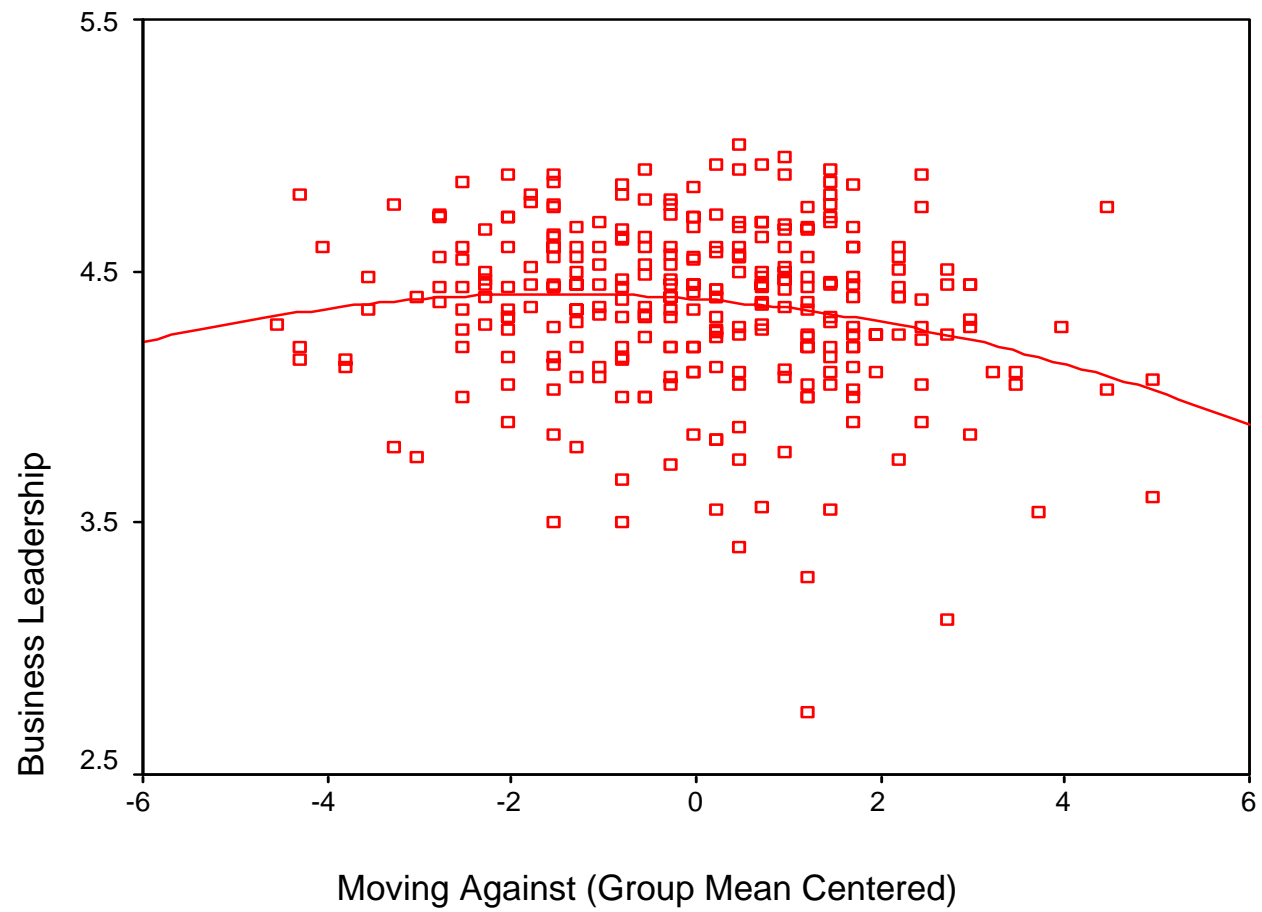


Figure 27. Curvilinear relationship between moving against composite and business leadership (with quadratic trend line).

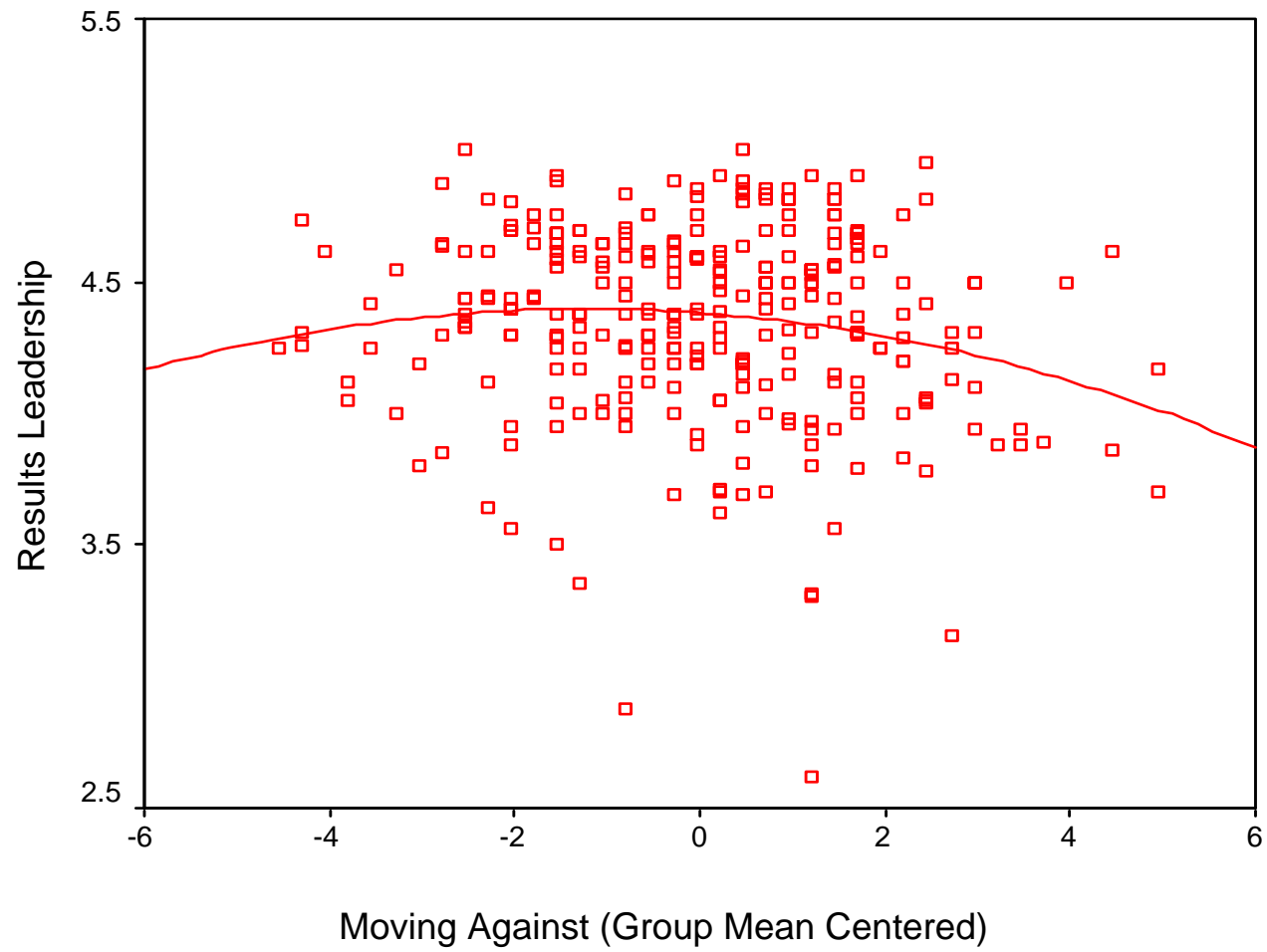


Figure 28. Curvilinear relationship between moving against composite and results leadership (with quadratic trend line).

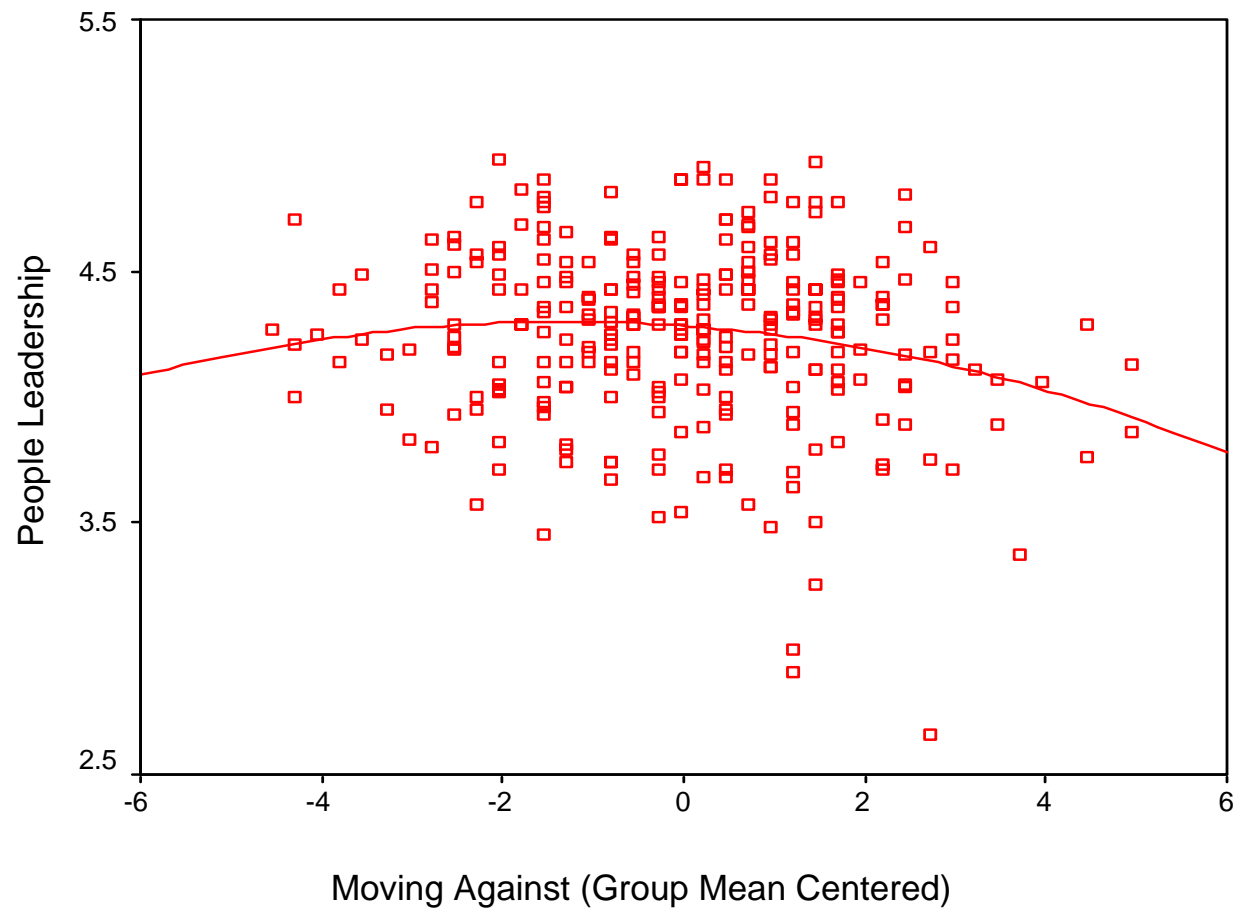


Figure 29. Curvilinear relationship between moving against composite and people leadership (with quadratic trend line).

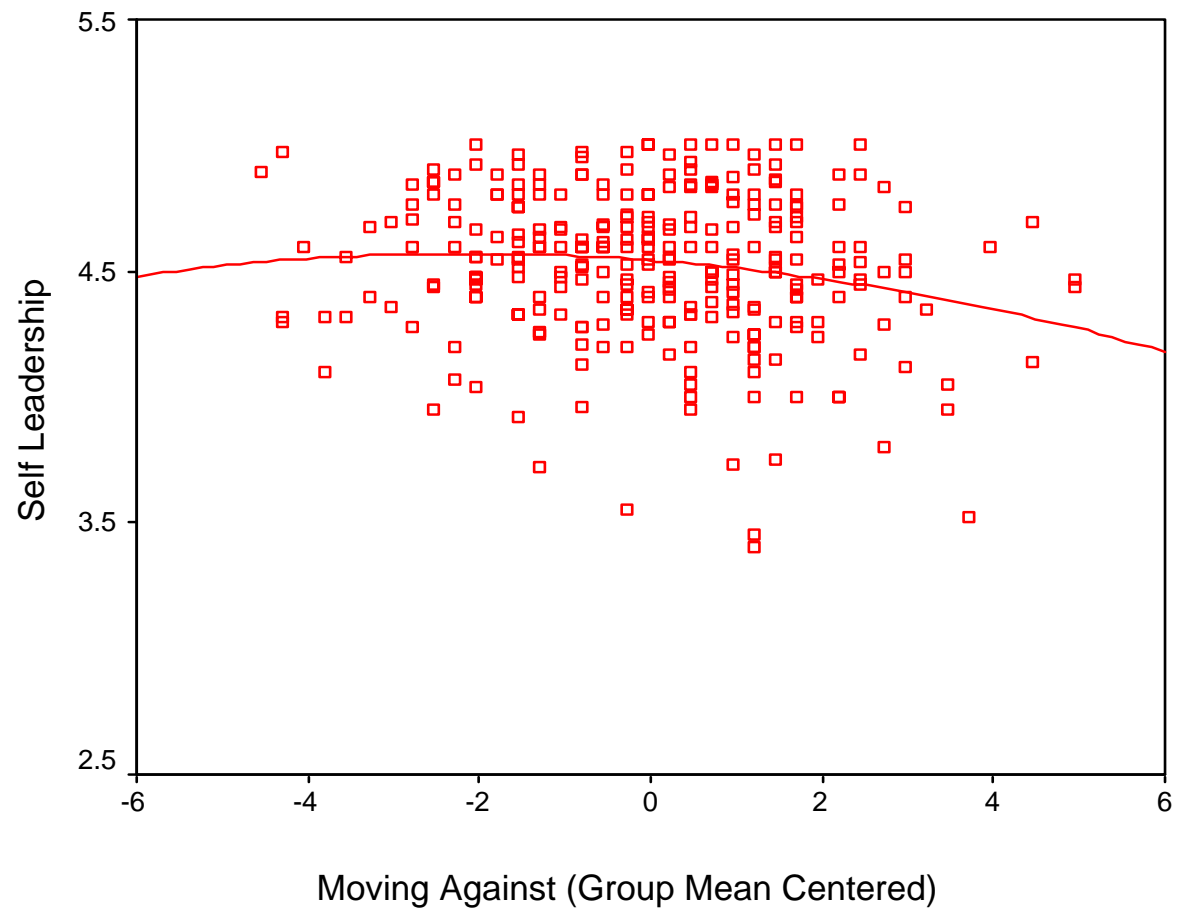


Figure 30. Curvilinear relationship between moving against composite and self leadership (with quadratic trend line).